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BULBS FOR POTS

AND FALL PLANTING IN THE GARDEN

LITERARY
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★ AUG 31 1949 ★

U. S. Department of Agriculture

A CATALOG OF THE BULBS OF THE AMARYLLIS, IRIS, ORCHID AND
OTHER PLANT FAMILIES

Special Articles: How to Grow Amaryllis;—Gladiolus;—Billergias; etc.
How To Force Daffodils, etc. Culture directions for all bulbs and plants listed.

A PERSONAL LETTER To You.

FALL 1949



CECIL HOUDYSHEL

1412 Third St.

La Verne, California

Sec. 34.66, P. L. & R.

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A PERSONAL LETTER,—to you

Dear Floral Friends:

This fall catalog goes to several thousand new customers to whom I need to explain that for about 25 years it has been my custom to preface our catalogs, twice a year, with a rather personal letter.

These letters are addressed as to a group but my desire is that each of you accept them as an individual and personal letter.

In the busy season we may get over 300 letters in a day. Many of them are friendly and even personal. Every one deserves a personal reply. But it is impossible for one person to answer all.

I find it much better to write two letters a year and publish them in our spring and fall catalogs. I try to include information of value in these letters and to discuss garden problems and a good many other problems that we meet every day. I am likely to discuss almost anything except sectarian religion or party politics.

We get many favorable comments from our customers about our arrangement according to plant families in the catalog; the fall culture information and discussions of garden problems; our personal letters, etc. But on one occasion the comment was unfavorable. I will relate the incident. During World War I, I tried to volunteer for service and was rebuffed. They said I was too old! But I got even and did not even offer to volunteer in World War II. But I hurled more bombs at Hitler and some of his pals than many a bombing plane. My bombs were verbal and were published in these letters. At a result I received a couple of letters, anonymous, advising me to "tend your posies".

That was very good advice too because a garden is a very good place in which to think. Since no one has ever been able to put a patent on thinking or to copyright it, and we do have free speech in America, I was able to increase my verbal bombing tempo.

I regret that quite a few have misunderstood the "buyer's strike" which has now prevailed for several months and of which I believe we have all approved and had a part in. The effect was so universally applied that even my own "butcher boy" advised me, "don't buy meat that is too high". A recession had to come and the buyers strike did force prices down. Naturally, it meant reduction in sales and a readjustment. But such conditions are normal after the inflation of prices that always result from war.

Personally, I think we are getting off easy. I do not anticipate a depression. If no large element of our people anticipate it, it will not come. One of the encouraging symptoms of the present is that more money was invested in government bonds or savings accounts in 1948 than either of the two previous years since the war ended. That means that working people and small business people are able to weather a reasonable recession.

What makes depressions anyway? There is just as much money in existence, just as great an abundance of the necessities of life. Workers are willing to work and produce. Capital seeks investments.

In my opinion, the only way to explain depressions is to believe they are psychological. Wrong thinking and fear on the part of many, perhaps the majority may be the cause. Since Herbert Hoover was blamed by a good many for the last one he must have been doing a lot of thinking. However our present administration thought enough of his wisdom to place him at the head of the commission to study and recommend ways for improving governmental agencies in efficiency and to reduce waste of time and expense.

One of the important efforts of the present time is the world wide search for "Security". England is trying the experiment of Socialism. Industry is in the hands of the government. They have even gone so far as to socialize medicine, recently. How can we fail to attribute part of the blame for England's present depressed economy and consequent low living standard upon this experiment with socialism.

Russian Sovietism was undertaken as an experiment to ameliorate the condition of the poorer classes, the masses. It has endured around 30 years. Whether men have found security and happiness in communism, I will leave to your

personal investigation. Our catalogs go to Russia and the Soviet Republic has been a customer for bulbs to go to the Botanical Institute in Moscow.

Since our present administration has shown its confidence in ex-President Herbert Hoover, I am now unlikely to offend our Democratic friends by quoting from a speech made by Hoover at the Ohio Wesleyan University, recently. He said: While security eliminates many of the risks of life it "also kills the joy that lies in competition, in individual adventure, new undertakings and new achievements. These contain moral and intellectual impulses more vital even than profits for from them alone comes national progress."

Speaking sarcastically of these "new ideas" of England and Russia, he said: "The reactionary notion of equal opportunity with the right of everyone to go as far as his ambitions and abilities will take him, provided he does not trespass on others, still holds in the American dream."

I believe it will continue to hold because this American idea has made us the strongest nation on earth. It has made us the richest. It has made us the most generous. We implemented and largely financed World War II to put down aggression and to advance the freedom of all peoples. Since the end of the war we have given foreign nations 22 billion dollars a year to help them toward recovery. The war cost us near \$250 billion dollars. The standard of living in America is the highest ever achieved in the world history.

And yet a governor or perhaps even a president may evolve a health program that includes socialized medicine. When we note the advancement made by medical science by the good and long tried and proven American way, I think the American people will not approve departure from that way. The experience we had when the government operated the railroads during the first World War must have taught us a lesson.

If we do not always approve the doctors' fees, there are always clinics, like that at the Los Angeles Co. Hospital (the greatest hospital in the world) where the sick can go for diagnosis, medical advise, treatment or an operation for what they are able to pay or at no cost if wholly indigent.

Are we likely to remove the opportunity of free enterprise from the medical profession in view of what it has accomplished under that system? I think not.

I am confident that California realizes it went a step too far last year in our pension law, at least in the way it was set up, and confident too that it will be corrected in the next election. We all need to study this question carefully before we vote. At least, I do. This fact I do know. At the age of 60 years, my resources because of the depression, amounted to a very small sum. We had only 1000 names on our mailing list. Now we have 35,000 names and throw away about 5,000 every year of the names of persons who do not buy for two years. Mrs. Houdyshel and I do not make a lot of money but we are free. Personally I would rather work than take a pension. I do believe that the proper place to retire to is the cemetery. This is not my original idea. It was first expressed by the Lord in the Garden of Eden, but in other words, I have seen too many acquire enough money and retire, get fat and die in a very few years.

The general tone of this letter is a discussion of what has made America strong and what will keep it strong, altho I did not announce that as my topic for discussion. You will agree with me that democracy and free enterprise are part of the answer. Also that work is another important element and that I believe that the work of old men is highly important. If we note the age of the important men of today, our Congressmen, our Supreme Court Judges, our business executives, review also the men of history we must admit that old men have always ruled most of the world and they still do.

You will agree with me too that we must keep America strong,—the strongest nation on earth,—even in all history, as it is now. We can do that with brains, brawn and spirit. A nation is a composite of its entire citizenry. Every individual is a vital element because he is one part of the whole. It is not only a duty to one's self to be as strong as possible, but equally a duty to one's fellows and to America. When we allow ourselves to become weak and to take instead of give by that much we have weakened America. That may seem infinitesimal but it isn't if large groups align themselves in that policy. Even tho a man has retired

and is able to live comfortably on an income from his savings, his pension from former employers or the state, it is my belief that he should still work.

Mr. Hoover quoted the Divine Edict given in the Garden of Eden. "In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken; for dust thou art, and unto dust shalt thou return." This is good enough authority for me.

Among the hardest working people in America are the rich capitalists. All they can get in the way of body comforts is food, clothing and shelter. If they eat any better food than I do (good meat, vegetables, potatoes, etc) it will make them ill, unable to work and manage their enterprises. Their clothes may cost more but my pants from Penny's are as good as theirs from Kruckenheimer since they clothe my legs, a custom which men have not yet forsaken. My house protects me from sun, rain or winds equally as well as theirs. I sleep as comfortably as they do.

I wonder if the rich may not have some other incentive for working. It can't be that there is sufficient satisfaction in the mere accumulation of wealth, because few of them really know how much they are worth. Henry Ford could not have told you probably within a hundred million dollars of how much he was worth. It can't be because they seek the adulation of the multitudes because they are only too often hated. When I look around and see the Carnegie Libraries, The Rockefeller Foundations, their research Institutions, I am wondering whether they may not have a higher incentive than they receive credit for. Perhaps they may enjoy giving even more than getting.

There are many enterprises for research in the study of Cancer, Heart Disease, Tuberculosis, Infantile Paralysis and other diseases. There are many also for scientific study and research in subjects of much importance. One of these I would like to mention because it may be of interest to some of you. Genetics and Eugenics are two closely allied sciences. Genetics, briefly is the science of heredity. Eugenics is the science which deals with those controllable influences that improve races, particularly the human race. Theodore Roosevelt was much interested in some phases of this science. All thoughtful and earnest people should be interested in all the factors that may be either eugenic or dysgenic to the human race, particularly to our American section of it.

One Californian has taken over the work of the Eugenics Society of Northern California and the publishing of their, "Eugenics Pamphlets". This man has been a world wide traveller; a student of history, art, literature and science. He is a profound thinker in my estimate. He edits and publishes the pamphlets. He distributes them gratis to thoughtful, studious people.

Some of the Pamphlets might better be called magazines and as a magazine they could be classed with the Geographic Magazine as the editor records and illustrates experiences and observations in the far places of this world. Other Pamphlets are mere collections of unorganized notes.

If you wish to qualify for receiving these pamphlets, please write to Mr. C. M. Goethe, 720 Capital National Bank Building, Sacramento, Calif.

We believe these publications should be in the hands of all teachers in our schools from primary to university; all lawyers, doctors and other professional men or women; all editors; all officials from the country town to the national capital and all thoughtful students who earnestly seek truth.

We have talked in a rather rambling way about strength, material strength mostly, so far. We all want America to be strong and we also realize that collective strength is but the sum of the strength of our individual citizens that are in harmony with our American ideals. Those who are not must be subtracted. But our material and physical resources alone cannot make us strong. There must be contributions from the arts, from education, from religion. Perhaps we can group them as intellectual and spiritual resources. These are the factors that control fear, that make us brave and steadfast, that give high incentives.

Life should be beautiful and flowers contribute to that result. We have made every effort we can to help you achieve success with your flowers, by advice and culture information and by listing bulbs, plants and orchids at the lowest price possible for the quality we are able to furnish. In this catalog you will find several new items such as Vallota, New Nerines, Oxalis, Lilies, Daffo-

dils, Tulbaghia, etc. In our price lists of Orchids, Saintpaulias and the "Iris 400" are many more. Any price list wanted will be sent gratis for a post card request.

If you enjoy reading our catalogs and are benefitted by their information, then I must ask you to give us your orders. Our only financing is from the profit of sales. Every year we must drop a few thousand names of those who do not buy.

If you approve of our propoganda for flowers and for right living and thinking, then you will also want to direct other customers to us. Many of you have already done so and we thank you.

I am wishing for you health and much happiness; peace and tranquility of spirit and may you have such garden success that yours is outstanding in your neighborhood. This achievement is of much greater public value than we sometimes realize.

If you are interested in Kodachrome slides with an appropiate lecture for your garden club or group, please write to Mrs. Houdyshel. The small fee required is less than that required for a good garden lecturer.

Sincerely,
Cecil Houdyshel.

TERMS AND INSTRUCTIONS FOR ORDERING

The prices in this catalog cancel all former quotations.

California Customers must add 3% Sales Tax.

Remit by check or M. O. If stamps are sent, send \$1.05 for \$1.00. We do not carry accounts. Remit the full amount of your order in advance.

C.O.D. We do not ship bulbs C.O.D.

Postage prepaid on orders of \$1.00 or over. Under \$1.00, add 10c extra.

Insurance and Special Handling. Please note changes in rates. Insurance up to \$5.00 value costs 5c. \$5.00 to \$10.00 costs 10c. \$10.00 to \$25.00 costs 15c. Over \$25.00 costs in proportion to \$25.00 rate. **Special Handling** gives your package the same handling as First Class mail and hastens delivery. More safe. Up to 2 lbs. costs 15c. 2 lbs. to 20 lbs. costs 20c. For each package. Heavier in proportion.

Insurance is especially important and is done only at your expense. We can replace an insured package if lost or if damaged by improper handling, promptly as we can then collect the value. Be sure to remit for insurance. Insurance however does not cover loss by freezing. That is our risk and we try to ship when safe and we insulate well when shipping to north in winter.

Express is safer for large or valuable shipments especially to the north in winter. It costs more than parcel post and is done at your expense. We add extra bulbs to approximate value of postage saved to us.

Prices given are usually for one bulb. A dozen costs 10 times the price of one, 6 are sold at doz. rate. Unless otherwise stated, 100 cost 70 times the cost of one or 7 times the cost of one doz. 50 are sold for the price of 4 doz., not at 100 rate.

Wholesale. We do not give discounts to dealers on small quantities of items from this catalog. Only a very few items herein can be quoted below the quantity rates, when given. But in most cases those rates are about equal to usual wholesale prices. Upon inquiry we will quote prices on desired items if able.

Foreign orders. Our prices include prepaid delivery as far as our 8th postal zone. We can usually prepay to Mexico or Canada. It is best to include some extra on export orders. If too much, we add extra bulbs. The 100 rate prices do not apply on export orders unless customer pays transportation. Air mail is often advisable for export orders but expensive.

Canadian Customers. Apply to Sec. of Destructive Insect and Pest Act, Advisory Board, Ottawa, Ont. (or ask your P.M.) for Permit and mailing label and send these with your order.

Many Latin American Countries now have certain restrictions on importations. Usually it is only necessary to send us an official permit. Your post master can supply all information or tell you where to get it. Be sure to comply fully as we are not permitted to ship your order unless we comply with your law. Because of the new laws we have been unable to ship some orders and the value has been placed to your credit.

Errors. We make them but correct them, if notified at once.

Partial Shipments. If everything is not included in first shipment a slip so stating is enclosed. When final shipment is made, another slip so states. Check them with order and if short, notify us at once.

Guarantee. Our bulbs are true to name and healthy, but we do not guarantee results since we do not control the conditions under which they are grown. If, in your opinion, our bulbs are not up to our specifications, notify us at once. If you are not then satisfied with our explanation, they may be returned. No refund will be made if planted unless circumstances indicate bulbs were at fault.

Culture directions are in this catalog, hence none are sent with bulbs.

Catalogs. Spring Catalog, Jan. 15. Fall Catalog, Aug. 15. Names are dropped from our mailing list if you do not buy for two years. If not interested, please ask P.M. to return this catalog at our expense, thus saving paper, labor and postage.

Correspondence. We enjoy your friendly letters. I answer them twice a year in our Introductory Letter. It is a fact that I work twelve hours a day or more and am still unable to answer all letters requiring it. Read entire catalog before asking questions.

We include in our catalog and price lists about everything necessary to success in the culture of the bulbs, orchids and plants that we list. Most of our letters of inquiry ask us to repeat information given therein. One of my greatest joys is helping people with their garden problems. That is why we put all this information in our catalogs, but it's getting along toward late afternoon for me and I can't write quite as many individual replies as I would like to do. But if necessary to consult me, make the reply easy. Where possible make it a questionnaire that I can answer yes or no. Enclose a self addressed post card or envelope.

Identifying Bulbs. We usually can. Send flower, foliage and if possible, a bulb. Give all facts known. Enclose self-addressed postcard and attach your letter to outside of package. We do not attempt to identify horticultural varieties of Gladiolus, Iris, etc.

Time of Delivery. All bulbs are delivered within range of correct planting dates. Delivery dates in catalog are sometimes only approximate.

Free Bulbs. Many dealers adjust their prices to allow for free bulbs with all orders. We do not. We compute the cost on bulbs we buy and even on those we grow, with a consideration for the stock available. We are satisfied with 10% profit which is lower than the usual profit even on groceries and drugs which sell in a much larger volume.

Since everyone knows that he really pays for his free bulbs we adjust our prices and cut them to the lowest limit without any margin for free bulbs.

But this year we have a large surplus of a certain item. I will not name it for if I did, no one would buy any and we need to sell about 25,000. It is not an outstanding bulb but it is one that sells in the cut flower market sometimes and looks nice in arrangements.

These bulbs will be included, gratis, on bulb orders that are for \$1.50 or more. They can be grown in pots in the north or in the outside garden in the south. They are hardy down to about 26° or 28°. Where colder than this do not plant until February and they will escape the extreme cold.

GENERAL CULTURAL DIRECTIONS

Rich sandy loam is the best soil. Only a few, like Bearded Iris, prefer heavy soil. A very few, like Gloriosas, must have sandy soil.

All soils require the addition of much humus. Compost all garbage, weeds, leaves, cut branches and manures. When rotted, add to soil and thoroly mix.

Fertilizers. We recommend only animal manures and compost. Fresh manure can be used on a few plants, that are growing vigorously, as a very light mulch, but after flowering. Too much fertilizer before flowering time may almost or wholly stop the flowers. When the growth of a plant becomes abnormally rapid it is unlikely to flower or produce fruit. Your over-fertilized peach tree is likely to produce no fruit.

Do not fertilize a plant in dry soil, or use any fertilizer, unless thoroly rotted in a compost heap, in the soil before planting bulbs, seeds or plants. Water lawns, trees, any plants well the day before applying fertilizer and again a few days after application. Do not fertilize a sick plant in order to make it well. You are more likely to make it worse or even kill it. Small plants and seedlings should not have too much either. Lush, rapid growth may be weak and "flabby". Sturdy growth with firm structure is better. Chemical fertilizers are like "patent" medicines. They are stimulating but often the final result is bad. The physical structure of soils is the most important thing. A well drained, friable soil is the best. Sand and humus can be added in sufficient quantities at least in flower beds and the humus can be added in fields by growing cover crops. For humus, add rotted manure, composted weeds, grasses and leaves, leaf mould or peat. It is seldom necessary to add any but organic materials to soils.

Compare plants with people. Both are living, organic beings. Air, water and food are necessary to their growth and health. But one does not give babies beefsteak, fried potatoes, apple pie and a cup of coffee. Nor is this a good diet for an invalid or an ill person, however good it may be for one in vigorous health who performs hard physical labor.

After blooming, many neglect their bulbs. As a result the bulbs do not flower the following year. For success one must continue to give good culture. This is the time to fertilize, irrigate and cultivate frequently, until yellowing foliage indicates the bulb is becoming dormant. During this growth period next year's flower buds are formed.

Depth of planting and distance apart often cause too much concern. Bulbs usually have sufficient adaptability to do well under widely varying conditions. If left in one place a few years, most bulbs adjust themselves to their preferred depth. Approximately, bulbs should be about 2 or 3 times their diameter apart unless their habit of growth is spreading—like Ranunculus. In such cases plant farther apart. Small bulbs as large as Daffodils may be 4" to 6" deep. Bulbs with a heavy erect stem need deep planting in order to remain erect. Plant deeper in light sandy soils than in heavy soils and in cold climates to protect them from frost.

Pests. Snails and Slugs are most serious garden pests. We have found the very best control is furnished by **Bug-geta Pellets**. They also kill cut worms and grasshoppers. They can be dropped or broadcast. Because so easy to apply, they are more economical than powders which require you to stoop in placing them. Buy the economical way, in 25 lb. bags. Price \$6.25 f.o.b. La Verne. Ants are a pest in the house and in the garden. They distribute **Aphis** and **Mealy Bug** and tend them like domestic animals. Best control is **Ant-B-Gon**. Set of 4 dispensers, filled, 70c f.o.b. La Verne. Best to send by mail. Ask your P.M. the amount of postage required on 2 lbs. from La Verne and send this amount above the price of 70c. **Ant-B-Gon liquid** for refilling 4 oz. 25c postpaid. **Mealy bugs** are a serious pest to garden and house plants. They are everywhere and must be controlled. First destroy ants. Wash them off of house plants and use a spray of water from a hose to dislodge from garden plants. You will still need to spray with **Garden Volc**. Use any type of sprayer and a small fly sprayer will do for house plants. Price, **Garden Volc**, 4 oz. for 35c, postpaid. Use Garden Volc also against Scale Insects.

For more extensive use we can furnish Volc Oil Spray in one gallon cans. This is a pure petroleum spray and is effective against mites, mealy bugs, scale, red spider, white fly larvae, etc. and when diluted makes 200 gallons. It is also a good carrier for other insecticides. Price per gallon, in tin, \$2.85 f.o.b. La Verne.

Garden Hose are a garden and greenhouse necessity. I have long been dissatisfied with the heavy, short lived rubber hose. Now I have found the nearest perfect hose, **Resinite Plastic Hose**. This hose is claimed to last for years. It is

not harmed by sun or weather, being run across by auto or truck. Does not kink. It is pure plastic material, no cotton to rot, no rubber to break down with age, no alkali or other chemical affects it. We have found only one thing can damage this hose,—very hot water under pressure. It is so unbelievably light in weight that a 4 year old child could carry a 25 ft. length, as it weighs under 4 lbs.

The inside is mirror smooth, thus water runs thru a small diameter as rapidly and delivers as much as a considerably larger diameter.

Price, small diam. hose, (approx. $\frac{1}{2}$ " or a little over) **Resinite Airtight Plastic Hose**, 25 ft. length, \$5.10 f.o.b. La Verne. By mail, postpaid, zones 1 or 2 35c extra; zone 3 or 4, 45c extra; zone 5 or 6, 55c extra; zone 7 or 8, 75c extra. The "Extra" is for packing, postage and insurance. Sales Tax 3% in Calif.

ACID AND ALKALINE SOILS

Most plants thrive in mildly acid, neutral or mildly alkaline soils. But others do not have so wide a range of tolerance. Rhododendrons, Azaleas, Camellias, Gardenias, Zantedeschias, Caladiums (and other members of Arum family), Nérines, Haemanthus, Gloxinias, Begonias, Orchids and most shade loving plants require an acid soil. Some like Gladiolus prefer mildly acid to neutral soils Beard-ed Iris do best in neutral to alkaline soils. The acid-alkali balance depends upon the concentration of hydrogen ions in a saturated solution. This is expressed in pH units. pH 7 is neutral. Below that the acidity increases; above it the alkalinity increases. For the mathematical, I will explain that the numeral is the negative logarithm denoting the concentration of hydrogen ions in gram atoms per liter.

To determine whether your soil is acid or alkaline, purchase for a few cents at your drug store a pad of litmus paper. Get both blue and red if available. Moisten the soil, blue litmus paper is turned red by an acid soil. The stronger acidity or alkalinity is shown by more rapid and pronounced change in color. If only one color paper is available moistened red litmus may be turned blue by holding it in the fumes of household ammonia. Turn blue litmus red by immersing in a very weak solution of any acid like white vinegar. Then dry.

Horticultural Peat, leaf mould, (oak leaf mould is the best) or compost will help correct soils that are too alkaline. Good drainage will cause it to leach out.

Danish Peat. Any peat is difficult to get right now for some reason. Buy any horticultural peat locally if possible. We can furnish only Danish peat, very acid, for 20c per pound, postage extra. (ask your P. M. what zone you are in from Los Angeles, near La Verne, the amount of postage required for the weight you want.) This is too expensive except for potted begonias, gloxinias, orchids etc. or a very rare plant in the garden.

Rootone induces quick rooting of bulbs, cuttings and the sprouting of seed. As the result of its action bulbs make a more vigorous root system and grow larger and produce greater increase. Slightly moisten the base of the bulb and cover with a thin film of Rootone. Dip end of cuttings into the powder. Tumble seeds in a jar or seed envelope with the powder. Roll the coated seed out and save remaining powder. Price, one-half ounce, a good supply, 50c postpaid. 1-lb. can, for very extensive planting, \$5.00.

Vitamin B-1 is a useful stimulant for plants, we believe. We have used it in transplanting bulbs and other plants with apparent usefulness. 100 tablets, 75c.

Directions for use, applying only to our own tablets. In transplanting bulbs or any plants, loose roots, dissolve 5 tablets in 1 gal. of water. Soak roots in this 15 to 30 min. Pour solution around plant when set. To stimulate growing plants, for the first application, dissolve one tab. in 2 gal. water. For succeeding waterings, use 1 tab. to 4 gal water once a week. **Warning**. Do not soak dormant bulbs in Vit. B-1. It rots them.

Sources of more information. Subscribe for Flower Grower, Albany, New York. \$3.00 per year. \$5.00 for 2 years. Send directly to them. Also join local garden clubs.

Plant Societies are of the greatest value to amateur gardeners. Some of them issue year books or publications of great value. Others have meetings and lectures. I belong to and recommend those mentioned below but there are many local groups as well as national, not mentioned, that are of great value.

American Plant Life Society. Note mention of this under Amaryllidaceae. The American Horticultural So. publishes the National Horticultural Magazine, quarterly, which members receive. This beautifully printed and illustrated magazine covers entire field of horticulture. Send \$3.00 annual dues, to Am. Horticultural So., 821 Washington Loan and Trust Bldg., Washington 4, D.C. **The Midwest Hemerocallis So.**, send \$3.00 to Pearl Sherwood, Atlantic, Iowa. **North American Gladiolus Council**, send \$1.00 to A. Bazdorf, Lincoln Park, N. J.

GARDEN REFERENCE BOOKS

Bailey's Cyclopedia of Horticulture. This 3-vol. set of over 3,600 pages describes almost every cultivated plant and has a wealth of culture information. On Orchids alone, this work is most valuable for its descriptions and culture instructions for almost every orchid in cultivation. The same is true for all types of bulbs, plants, shrubs or trees. Price \$37.50. This is the most monumental work in any language on the entire field of Horticulture. It is an ideal gift for a plant lover.

Hortus Second (Bailey). A Concise Dictionary of Gardening. This 778-page volume lists and describes nearly every plant offered in catalogs, and some that are not in the Cyclopedia of Hort. It contains only a few culture hints. Both works should be in every garden library. Price, \$7.50.

The above publications are subject to price changes, without notice by the publishers. In the case that prices again rise on these or any books listed here we will notify the customer. The customer may then accept or cancel order.

A Southern Garden, by Elizabeth Lawrence, a handbook for the Middle South. A most useful handbook for all gardeners, north or south. Bulbs and all garden plants. 251 pages. Price \$3.00

Enjoy Your House Plants. Excellent handbook of window gardening by Dorothy Jenkins and Helen Van Pelt Wilson, 238 pages. Price \$2.50.

Begonias And How To Grow Them. Bessie Raymond Buxton. Invaluable in growing all Begonias, including the Tuberous. 161 pp. \$3.00.

American Orchid Culture. Edward A. White. This is a complete handbook of American Orchid Culture for both commercial and amateur growers. Most interesting accounts of Orchid hunting trips, in many lands, are related. 14 beautiful color plates and many other illustrations. A beautiful, interesting, useful book. 276 pp. \$6.00.

Greenhouse Gardening For Everyone. Ernest Chabot. Important factors are noted including correct temperatures for forcing plants, bulbs and orchids. 266 pp. \$3.00.

Tuberous-Rooted Begonias and Their Culture. George Otten, veteran grower of Tuberous Begonias, with 60 years experience. An 88-page book, with 35 excellent illustrations. This is the only book entirely devoted to Tuberous Begonias. Price \$2.00.

Bulbs For Beauty. Charles H. Mueller. 296 pages, illustrated. Experienced gardeners will gain new information about bulb culture from this book. Price \$3.50.

How to Grow Orchids. By Cecil Houdyshel. A 12-page pamphlet, no illustrations, carefully explains requirements of easily grown orchids. Price 25c.

The African Violet, Saintpaulia. Helen Van Pelt Wilson. The first and still the best book on Saintpaulias. Revised and enlarged, by Helen van Pelt Wilson. The revision includes all the better new varieties. Discusses all phases of culture and classification of types and varieties. Price \$2.75.

The New Garden Encyclopedia. By a group of Horticultural Experts, edited by E. L. D. Seymour a well known garden magazine editor and authority on gardening. This is a complete, practical guide for every detail of gardening. It gives pronunciations of plant names. 1380 pages, 10,000 articles, fully illustrated. Price \$5.00.

Favorite Flowers In Color. By Paul F. Frese, Editor of Flower Grower and others. Edited by Seymour. 634 pages of descriptions and 800 flowers are shown in full natural colors. Everything that flowers from trees, shrubs, to bulbs. One of the most beautifully illustrated flower books published. Price \$4.95.

The books are cloth bound and printed on book paper. Postage prepaid. Add 5c for insurance to \$5.00. Sales tax 3% for California customers.

BULBS AND ORCHIDS AS POT PLANTS

Bulbs and orchids are most desirable as pot plants. They may be grown in the living room, kitchen, a light basement room or in a small greenhouse quite as well as in a large commercial greenhouse.

The following bulbs are recommended for growing or forcing in pots. Agapanthus, Amarcrinum, Amaryllis, Clivias, Crinums, (rather large and require space), Elisena, Habranthus, Haemanthus, (especially Katherinae and next coccineus), famous Blood Lilies of South Africa, Ismenes, Nerines, Sprekalia, Tulbaghia. All the above are in Amaryllis family. Then there are the Marica, Orchids, Oxalis, all the Araceae including Zantedeschia or Calla Lilies, Amorphophallus, Arums, Sauromatum and Fancy Leaf Caladiums; also Gloxinias, Achimines, Saintpaulias, Tuberous Begonias and Billbergias.

Nearly all bulbs may be grown in pots. Crinums do well but require large pots and a wide space for the foliage. Crinum Cecil Houdyshel will often give a half dozen or more scapes of flowers scattered thruout the year. It would probably require a space of two feet on every side and an 18" tub for top size bulb.

POTTING DIRECTIONS

Bulbs bloom better in pots that are not too large. A 2½" Amaryllis will do well in a 6" or 7" pot. Many use a 5" size but I prefer to give as large a pot as will be favorable to flowering. Give larger or smaller bulbs of any sort, pots in proportion to this size, that is, 2 or 3 times the diam. of bulb. Small bulbs may be planted 2" or 3" apart in any size pot.

Most large bulbs, like Amaryllis, may have 2/3 of bulb above surface but small bulbs, especially Anemones and Ranunculus, should be covered about 1".

Use clean pots. It is advisable to boil and scrub the surface. Even new clay pots should be boiled, or soaked for two days to remove chemicals. Cover the hole at bottom with a piece of broken pot, concave side down. Above this place small pieces of broken pot and gravel. This helps to drain away excess water.

The drainage must be perfect and it is essential that the soil above this drainage be of a friable texture that permits water to pass thru freely.

The best soil is a rich sandy loam with the addition of plenty of humus. For humus one can combine rotted leaf mould and old rotted dairy manure well broken up and rubbed thru a screen of smallest gauge. For most plants the proportion can be 2/3 sandy loam, 1/3 humus.

Fertilizers. Many advise the addition of fertilizer to potting soils. We never use any except the rotted dairy manure and leaf mould and sometimes a tablespoon of bone meal. If new roots come into contact with much fertilizer they are burned. Commercial fertilizer is especially a hazard. When the plants have become well rooted and have made a good top growth, most of them will be helped by using liquid manure. Cover manure with water and allow to settle. Pour off water and dilute further until it is a very light amber, the color of weak tea. This can be used about every two weeks but don't use it on dry soil and thirsty plants.

Sun exposure. Note requirements of plants under listings. For full sun, use a south window. For half sun use an east or west window and add a thin curtain if it proves too much. For Clivias and others requiring full shade or only a little filtered sunlight, use a north window or place on a stand at a distance from window, but always give plenty of light and good ventilation, especially in gas heated rooms.

Temperature. Most bulbs root better in a cool room of 45°. There must not be too much water given while roots are starting as it may cause bulbs to rot even when cool. When a bud or foilage shows that growth has started, gradually bring the temperature to about 70° and water a little more. The best temperatures for plants vary. Some like more warmth than others. This is indicated in the special culture directions for these plants.

Probably more failures in forcing bulbs result from starting the forcing

process (bringing the bulbs into a warm room with more light) before they are well rooted, than from any other cause. When bulbs are well rooted bring them into warmer temperature by easy stages, not suddenly from 45° to 75°. Gradually increase water supply.

When thru flowering, do not forget them but keep them growing as long as possible. An Amaryllis bulb will grow for 5 months or longer before going dormant.

CATALOG ARRANGEMENT

is by Plant Families, according to their relationships.

In the following lists the **genus** (plu. **genera**) is mentioned first. After it, the **species** (plu. also **species**) or horticultural variety is named. The initial of the genus is used for the second and succeeding species. Thus A. will stand for Amaryllis or Agapanthus depending on the genus last named in full. When a person's name in parentheses follows a plant's name, that person is the botanical authority for the name.

THE AMARYLLIS FAMILY—*Amaryllidaceae*

This Family includes the following bulbs, Agapanthus thru The Alliae.

The American Plant Life Society was founded in 1934 as The American Amaryllis Society. The interests of the Society have recently been enlarged to include other bulbs and plants and the name changed but with no lessening in interest in Amaryllids.

The annual book, "Herbertia," is devoted to Amaryllids. It consists of about 250 pages, beautifully illustrated, on fine book paper, and is edited by Dr. Hamilton P. Traub of the U. S. Dept. of Agriculture, the greatest living authority on the Amaryllidaceae. Each member receives a copy.

The members also receive the occasional publication, "Plant Life," on other bulbs and plants. The next issue will be on Zantedeschia.

Those who grow Amaryllis as an interesting and intellectual hobby and who love their vivid beauty, are invited to become members of the society. The annual dues are \$2.50 per year, which you may send me.

Almost the only expense of the society is the publication of Herbertia and Plant Life and at present the membership fees are not quite enough. Therefore on Jan. 1, 1950, the fee will be advanced to \$3.00. You may still join the Society for 1949 for the cost of \$2.50 if done before next Jan. 1. Herbertia, vol. 15 (1948) has recently been mailed. Vol. 16, (1949) is now being printed and will probably be mailed before Jan. 1.

The society also publishes the following two books. These are bound in manila paper. These books will be of interest only to advanced collectors and students, those who understand scientific terms.

Amaryllidaceae: Tribe Amarylleae, by Traub and Moldenka. 18 illustrations, 194 pages. \$4.00. This is a systematic treatment of one of the main tribes of Amaryllids, in scientific language. The most important work on the taxonomy of Amarylleae since the publication of Baker's "The Amaryllideae," in 1888.

Descriptive catalog of Hemerocallis Clones, 192-1948. By Norton, Stuntz and Ballard. This describes by means of key numbers all horticultural varieties and species of Daylilies.

These may be ordered direct from the secretary of the society E. Frederick Smith, Dept. H., Box 2398, Stanford, Calif. He will be glad to receive your membership fee for the society or your renewal.

Amaryllid nomenclature. Carl Linnaeus, father of modern botany, made the first, rather complete scientific arrangement of plants according to relationships in the 18th century. His information about many plants was wholly inadequate to achieve perfection. Even in my later first French edition, 1798, nearly all American epiphytic orchids were placed in one genus, Epidendrums, and under the genus Amaryllis he included certain Crinums, Zephyranthes, Sprekelias, Brunsvigias, Nerines, etc. Botany is a progressive science and later explorations and discoveries have made possible many improvements in plant classifications and have required changes in nomenclature. Horticulturists are often loath to

accept the new classifications and names. But we must do so even if inconvenient at first. It is not logical to continue an error.

In our catalogs, we accept changes in classification and names as made by recent writers in *Herbertia*. These have been approved in "Gentes Herbarum", the publication of the Bailey Hortorium of Cornell University. To help you avoid ordering a bulb you already have we give both old and new names, thus: *Brunsvigia rosea*, (*Amaryllis belladonna*); *Amaryllis advena*, (*Hippeastrum advenum*).

Amaryllis Show. An announcement of a Fall Amaryllis Show at the Los Angeles County Fair, was made in our spring catalog, but there will be no Amaryllis Show, sponsored by the American Plant Life Society, as the manager of flower shows for the County Fair provided no schedule which the society can approve. In fact, no schedule was adopted.

Agapanthus means Love Flower. Blooms in spring and summer. Large attractive umbels, blue or white on tall erect stiff stems. Easy to grow in south in full sun or slight shade, any good soil, and in the north in tubs or buckets, wintered in basement. Delivery any time except for the deciduous variety, *mooreanus minor*, which is delivered in winter to early spring.

A. longispathus. New species. Flowers resemble *Orientalis* but blooms more profusely and is more graceful. 50c.

A. orientalis (umbellatus) Blue Lily of the Nile. Our variety is an especially fine one with deep blue flowers on a tall stem. Many flowers are produced in spring and thru summer. 50c ea. Extra large roots, 75c.

A. orientalis, "Sky Blue". Lovely light blue. 75c ea.

A. orientalis, var. Albidus. Has pure white flowers. 75c ea.

Alstroemeria (pronounced -stre-, not -stro-). Very showy flowers, many in an umbel on a long, slender, stiff stem. The pastel tones are rich and varied, the form unique. Long lasting and popular as commercial cut flowers.

Culture. Good under drainage is essential, therefore plant if possible in sandy soil to which is added much leaf mould or other humus. On heavy soil add 6" sand, equal or greater depth of leaf mould and spade to depth of 6" below original soil surface. Plant before Nov. 1 if possible. Altho native to semitropical climates Alstroemeria have been grown as far north as N. Jersey. When grown north of the border line of their hardiness they should be planted rather deep and earth mounded above, to be raked away when heavy freezing is past. A heavy mulch above this will also help as the tubers must not freeze. If one can get the tuber thru the first winter, they are usually safe thereafter but as tubers work downward it may require 2 or 3 winters to give one complete assurance of their safety, but we can't guarantee any degree of winter hardiness. Give Alstroemerias about 25% shade. They can be grown in 6"—7" pots, of half very sandy loam, half thoroly rotted leaf mould, but drainage must be perfect. Dry them off when tops yellow normally.

Alstroemeria chilensis. Most attractive pastel tones of white, pink, red, yellow and orange. 20c ea. \$2.00 doz.

A. ligtu angustifolia. Flowers similar to *chilensis* but larger and on a taller, stiffer stem, often 3 ft. 30c ea. \$2.75 doz.

A. ligtu Stinsoni. Like *angustifolia* but deeper colors. 30c. \$2.75 doz.

These two varieties of *A. ligtu* are the most desirable of all and the best for production of commercial cut flowers. One can increase the stock by planting the freely produced seed. For pure seed, do not plant two varieties near together or the insects will cross pollinate them.

A. pelegrina. "Lily of The Incas." Dark rose. Inner petals spotted reddish purple. 25c ea. \$2.50 per doz.

A. pelegrina alba. Pure white Lily of The Incas. 25c ea. \$2.50 doz.

A. Assorted colors and varieties. 20c ea. \$1.50 doz.

Amarcrinum Howardii (*Crinodonna Howardi* is the better name.) A cross between *Brunsvigia rosea* (*Amaryllis belladonna*) and *Crinum moorei*. Flowers are a pure pink and very attractive. As it is a winter bloomer and profuse, it is a valuable bulb for a large pot. \$2.50 ea. Jumbo bulbs that will give more flowers, \$4.00.

Amaryllis Linn. This genus as constructed by Linneaus was untenable because he included plants now known to belong to other genera. The invalid name

Hippeastrum was used by both Herbert and Baker, but now we are scientifically correct when we use the name that has always been most popular. To the word "Hippeastrum," literally translated "horse star" we can now say "horse feathers," and forget the word.

Amaryllis are the easiest, the most showy and popular of all bulbs for growing in pots. Equally desirable for southern gardens where they are hardy along the east coast to N. Car. and on the west to Vancouver. In the middle section they may be grown as far north as Ark. and Okla., but note special directions for colder sections.

How To Grow Amaryllis. In the garden, in the deep south where temperatures go only a few degrees under freezing, Amaryllis bulbs need to be covered only about an inch or two. Farther north they should be planted about an inch below frost penetration, in protected places and mulched with straw, leaves and/or brush. In Okla., a customer reports a depth of 4" with mulch is safe. Try our "Hardy Hybrids" and don't plant over about 6" deep to top of bulb. 4" deep is better.

In Pots. A bulb 3" or less in diam. needs a 7" pot, and larger bulbs need larger pots. It is better to pot in Nov. or Dec. Better blooms result. But one can pot them as late as March and it is better late than never. The early potted bulbs will start more easily and give better flowers, but in either case the flowers will be better and will show more fully their full quality the second year.

The best potting soil is a rich sandy loam. If not sandy use a friable loam and add sand. To this add an equal quantity of well screened and well rotted dairy manure and leaf mould. Use no fresh or partially decayed manure and no peat or sphagnum. One tablespoonful of bone meal to each pot is recommended. Mix all ingredients thoroly.

In potting the bulbs, carefully preserve any living roots, even remnants. Clean but do not scrape the base of the bulb and dust the moistened surface of base and the roots with Rootone. If there are no roots, coat base of bulb with Rootone, which will hasten their formation.

Pot the bulb two-thirds above surface and water enough to settle soil. After this keep the soil only slightly moist until growth starts, then gradually increase. When first potted set them in a cool, light room but not in sunlight. The best temperature now is not over 50°. The bulbs must have sufficient time to form a good root system under these conditions. If placed in a warm room and exposed to the sun, top growth will be made before roots, and the results are poor flowers or none.

When you are sure that roots have formed, but not before, water the plants as directed with (or without) Vit. B-1. But be sure to leave the bulbs a sufficient length of time in a cool room. They need this period of dormancy and sufficient time to make a good root system. Many fail because they try to force bulbs before they have rested and have made good roots. If you get a poor flower it may be because the bulb had no roots and had only the sustenance stored in the bulb from which to make flowers. Lack of a good root system to nourish the flower will affect the quality of the flower in every way — size, substance and even color. So, don't remove pots from the cool room too soon. Wait until they demand it by top growth. Then bring the pots by easy stages to a temperature of 50°, 60°, then about 65°. Day time temp. should never be much over 70° for best blooming.

After flowering the bulb has shrunk and a long period of growth is necessary. If good growth is made at this important stage, the bulb will become much larger and offsets may be made. Keep them growing as long as possible. When the weather is warm outside the pots may be plunged in the garden. If rim of pot is sufficiently below soil surface the roots may emerge and add range to the root system. Or better still, shift the bulb and the unbroken lump of soil to the garden. Water liberally during growth and when in good growth use manure water or mulch with manure. This is good advice for pot grown bulbs as well, but don't give heavy feeding to a sick or starved bulb. Plants, animals and people must have enough vigor to digest and assimilate food. If they do not have this, it becomes a poison.

Keep the bulbs growing as long as they will grow. When the foliage begins

to yellow, about Nov. usually, one may reduce water, and give them a rest. Store pots in a cool room as for starting.

Usually the summer's growth will have increased the size of the bulbs sufficiently to require shifting to a larger pot. The new pot should be large enough to accommodate all the roots. Do not remove or injure any of the roots and contrive to distribute them thruout the soil.

When repotted, water at once to settle soil around the roots. Thereafter repeat the procedure followed when you planted the dry bulbs. But your bulbs are now much better bulbs. They are not dried out and they have or should have many roots. If kept too wet or too warm while dormant, the roots may rot. But if you handle the bulbs carefully you may expect more, larger and better flowers the second year. With experience you may become skillful in having flowers even by Jan. 1 and others up to May 1.

I am frequently asked why the inquirer's bulbs do not flower. Perhaps they have flowered the first year after their purchase but not thereafter. Some state their bulbs become smaller each year. These results inevitably follow wrong culture. Flowers in the spring are sure to result if good growth was made in the preceding period. If you have trouble in getting good growth in pots, be sure to try shifting to the garden after flowering.

There is no such thing as the Red Fire Disease of Amaryllis. Nor is it "ketching". The red pigment or rust results from decay of the Amaryllis tissue of any part of the plant. It is the normal reaction of the Amaryllis tissue to any injury or bruise and may be caused by ones shoes, garden tools, cut worms or other insect bites, sunburn or frost, cloddy or gravelly soil, too great acidity of the soil, contact with soil sulphur or chemical fertilizer or even too much fresh manure. It often appears in a very mild form in stored bulbs as the result of decay or oxidation of the outer tunic of the bulb.

None of these things are of grave importance. Even a healthy man may sneeze.

But when a bulb is really sick the red rust is excessively produced and this symptom should not be overlooked.

Check on pot drainage, soil, and all conditions.

When a bulb is infested with narcissus fly, dig out the grubs and coat wounds with tree seal and replant. Do not treat Amaryllis wounds with sulphur. It is too acid and is therefore a poison.

Do not plant Amaryllis too close to trees or shrubs. They do not compete well with roots of such robust plants.

How to judge the quality of the flowers of Amaryllis hybrids. The perfect flower of the Leopoldi type should be 5" to 8" across. The petals should be well rounded and broad, overlapping each other, no twisting of petals, and they should form a wide open, flat flower. The texture should be smooth and firm, of good substance. The tube should be short. There should be little or no green in throat but the species Leopoldi contains considerable green. There are few hybrids that do not contain some green. Very few are perfect in every respect.

There should be no dull colors, like brick red. But colors should be bright and of every imaginable tone within the range of this genus.

Self colors are desirable to go along with stripes and other variations. But it is difficult to get other than red selfs and these are unusual. A few of our Select Strains, American Hybrids are pure red, scarlet, rose or pink selfs. But they are few and not separately labeled. Don't order self colors or any colors except as listed.

Please note. There is no quantity discount on Amaryllis except as noted with listing.

Amaryllis advena. Oxblood Lily. 5 to 8 ox-blood red flowers in an umbel, on a 10" slender scape, preceding foliage. Fall bloomer. **Culture.** Not suitable for pot culture, but so nearly hardy that in mild sections of north it will succeed. In Michigan, in the section where peaches are grown, this Amaryllis has been grown commercially. It may be planted 6" deep and mulched, in a protected situation. Full sun exposure, heavy or medium loam soil is good but does well in lighter soils also. Price 50c ea. \$5.00 doz. Delivery late June.

A. psitticina. Species from S. Brazil. Large bulb and plant. The large flowers are green tinted with carmine lines radiating to the carmine edge of petals. The

effect is of a very pretty red and green Amaryllis. But the green here is attractive. Here this species flowers in winter and is a free bloomer. When well established in a pot this species will have foliage thru the winter. A cool house or room is best. Valuable in raising hybrids when seeking winter bloomers. \$7.50 each.

A. Sibyl Houdyshel, A. ambigua, A. Johnsoni, A. Near White Hybrids. All these are sold out for the present. Please do not order them or any others not listed in this catalog.

A. Hybrids, Select Strains. These are the best American hybrids, of Leopoldi ancestry. Many Amaryllis sold are chance seedlings grown from seed collected in the field. These are likely to produce the sturdiest bulbs. From a vegetative standpoint they are the best. But for the most beautiful flowers, breeders select the best parents having the most beautiful flowers, grow them in a greenhouse and cross them by hand. Our Select Strains are produced thus.

Color Classes. These are named from the parents. When they first bloom, off colors are removed or "rogued" out. They are again rogued the second year. Nevertheless, the color classes are only approximately correct. Many off colors are missed when rogueing. There is also a wide difference in opinion as to color. One calls a flower pink. Others may call it rose. Therefore, we do not guarantee the color but we do exchange them if the customer is not satisfied. Seldom, however, is a customer willing to part with a bulb of this strain, even tho it be an off color. The following color classes are as selected and named by the originator. When you get a wrong color and do not wish to keep it, notify us at once and await instructions.

Select American Strains, Assorted Colors. 2½" diam., up. 90c ea. 3 for \$2.50. \$9.75 doz.

Select Am. Strains, White Background. White, with light to medium markings of color. 2½", up, \$1.00 ea. 3 for \$2.85.

Select Am. Strains, Red Shades, 2½" up, \$1.00, 3 for \$2.85.

Select Am. Strains, Scarlet Shades, 2½" up, \$1.00, 3 for \$2.85.

Select Am. Strains, Large Sizes. We have a few bulbs in the field that are marked as to color. These are older and much larger bulbs than the above. The diameters run from 3" to 3½" which makes them 1½" to 3" larger in circumference. They will give better flowers and many more, as these larger bulbs usually give at least 2 flower scapes but more often three.

Assorted Colors, Large bulbs, \$2.25 ea. 3 for \$6.50. All colors are in this assortment, even Rose Red and Rose Purple and the quality is the same as the following. **White Background, Red Shades, Scarlet Shades or Stripes.** Your choice of these colors, \$2.50 ea. 3 for \$7.25. **Rose Shades**, from rose red to rose purple, but not separately marked as to shade. \$4.00 ea. Limit one bulb.

Solid Colors. Large bulbs. These bulbs are almost self colors but not quite, as there is some other color in the throat but not pronounced. Your choice of **Solid Red or Solid Scarlet**, \$4.00 ea.

Self colors, Large bulbs. No other color is present. Your choice of **Self Red or Self Scarlet.** We have found that many of the offers of "Pure Red", "Pure Scarlet", etc. usually mean that the red or scarlet is pure but other markings may be present. Price \$7.50. ea.

A. hybrids, American strains. Some of these may be as good as the Select Strains but the average quality is not quite equal to them. They are from various sources while the Select Strains are mostly from Howard and Smith or are my own breeding. Assorted colors, 75c ea.

A. Houdyshel's Hardy Hybrids. We have been calling these Rutila hybrids but a long study of their character leads to a doubt whether the species rutila is in their ancestry. But there is no doubt about their hardy, thrifty nature. Do not be misled by the use of "hardy" to describe them. They are not winter hardy in Minnesota or the coldest states. But they are the toughest, hardiest Amaryllis that we have tried and planted outside in a protected place, with 4" of soil above the top of bulb, with the addition of a heavy mulch of straw and leaves they will survive even in So. Kansas, when 17° below zero was recorded. Probably the mulch was very heavy. Since any bulb is more winter hardy when it has a good root system it may be advisable to pot the bulbs this fall and shift to garden in early spring.

Possibly with a pile of brush above the mulch they might be wintered in the garden even farther north. There is no doubt that this strain extends the northern boundary which limits Amaryllis hardiness.

This is an extremely vigorous, rapid growing and multiplying strain and equally prolific with flowers. Most of them are similar in color, orange scarlet with white throat and green keel. An ideal strain for outside planting and landscape effects. Their bright vivid color "hits you in the eye." Altho not an exhibition type, many will like them in pots, where they are easier to grow than the more aristocratic hybrids, and their bright cheerful colors in Feb. and March will be most welcome. Price, 75c ea. \$7.50 per doz. \$50.00 per 100, prepaid.

Amaryllis Seed. We have seldom sold Amaryllis seed but last year we had many more than we needed to plant and sold this surplus for about one fourth of their usual price and did not have enough. This year's crop was so small that we do not intend to plant any. The price is adjusted to about the usual price or below for the quality of our Select Strains. Order early as we will not have enough. Plant seed at once as the fresh seed germinate better and make huskier plants. Price 50c for 25 seed, one lot only to a customer who orders Amaryllis bulbs at the same time.

Plant Breeding is an interesting science and art. Undertaken as a hobby, it has often resulted in fame. It will involve and develop great skill, ideals of beauty, good taste and intelligence. I suggest you start with our Select Strains. Get several bulbs and use the pollen only from those you like the best. Cross pollination is easily accomplished by placing the powdery pollen borne by the six stamens on the stigma in the center. The stigma when ready for pollen will usually be opened into three parts. When the seed pod is ripe it bursts open and may be removed and dried. Plant the seed (soon) in a fine sandy loam containing plenty of humus. Do not use peat. Cover seed about $\frac{1}{2}$ ". Seedlings may be grown in pots in house or greenhouse where they will continue to grow all year without a dormant interval until they flower. Usually this requires 2 to 3 years. In the warm south they can be grown outside under the half shade of lath. But frost usually destroys foliage in winter and cool nights interrupt growth, slowing development.

Brunsvigia rosea (Sym. Amaryllis belladonna, Aitson). Familiar in Calif. and the south as Amaryllis belladonna, Naked Lady Lily, etc. It is hardy where minimum winter temperatures are about 10° above zero. It will be safe to plant it on the east coast to N. Car. and to Washington, D. C.; thruout the south where winters are mild; on the Pacific Coast to Vancouver. They do not succeed in pot culture.

The many flowered umbels are of the most exquisite pink and the most entrancing fragrance. Only in the rose and the Belladonna Lily does nature assemble these two qualities in one flower in such perfection.

Brunsvigia rosea major. Earliest to flower and largest. Fragrant, pure pink flowers. A favorite florist item. L. 50c.

B. rosea minor. Flowers in Sept.—Oct. Pink with lighter throat. 50c.

Clivias. Altho easy to grow and to flower by the amateur they will always be classed with the aristocrats of flowering bulbs, because the flowers easily place them there. They increase so slowly by division that the chief method must be thru the freely produced seeds. But Clivias require at least five years and usually seven, to flower from seeds. This time involves expense. They can never become very cheap.

Clivias have evergreen, strap-like foliage somewhat resembling that of Amaryllis. The flowers are produced in umbels of 10 to 25, in rich and exquisite tones of orange, in March and April. When not in flower the deep rich green foliage and later the red fruits are most ornamental.

Culture. They are usually grown in pots, even in the south, as more perfect foliage is thus possible, and when in flower one plants them in the house. We grow them in a lath house, lath spaced $\frac{1}{2}$ " apart and in garden under Avocado (evergreen) trees, directly in the soil as they are often grown in Calif. When grown thus they will make very large clumps. They must have shade with only a few flecks of sunshine, but plenty of light and air.

Clivias must never be dried off or allowed to lose their foliage. Keep them well watered after flowering, all summer and fall. Liquid fertilizer occasionally

helps. When growth ceases in late fall rest them by giving them less water. But keep moist enough to prevent wilting of foliage. At this time they should have a cool room with temperatures from above 32° to not much over 50°. Pots should be 8" for a small plant up to 12" for larger. As they grow and increase, do not divide but shift to larger pots. Drainage must be perfect. Potting soil is described under "General Culture Directions." pH 7 is about right. One cannot guarantee a Clivia to flower the first year after moving tho they usually do.

The foliage of our Clivias, grown outside in the ground, will not be as perfect as that of pot grown plants. But when potted, they replace the old foliage in a few months and become specimen plants.

Clivia miniata. Wide open flowers of soft yellow orange. Hardiest, \$2.75.

C. miniata hybrids. Similar to the species "miniata" in foliage, hardiness, wide open flowers, etc., but there is some variation in color and form of flower. Most of them are in light orange tones. A few are dark and a few have a white throat. Do not express your color preference for any Clivia hybrids as we cannot tell the color from the plant. Blooming size, \$4.00 each.

C. nobilis hybrids. Again we can offer a few. These have wider foliage and are less tapering at tip. The flowers are larger, with more rounded petals and many are darker red-orange in color. Blooming sizes, \$6.50 ea.

DAFFODILS AND NARCISSUS

both belong to the genus *Narcissus* of the Amaryllidaceae.

Culture. All Daffodils except the *Polyanthus Narcissus* are hardy both in the mild climate of the south as well as in the colder northern states. In the north especially it is best to plant the bulbs rather deep where the frost does not reach. Six inches is about right. Smaller bulbs may go more shallow and be mulched. In California too and all the south there is an advantage in deep planting. Plant September to November.

Sandy loam is the best soil, but any good rich garden soil will do. Use no fresh manure. The addition of lime to the soil is good, especially if leaf mould is used in sandy soils.

In pots. Daffodils force easily. Pot the bulbs early for earlier flowers, Sept. to Oct. The soil should be 2/3 sandy loam, 1/3 leaf mould and perfectly decayed dairy manure (use both or either one). Water the pots well. To start Daffodils, plunge the pots in a cold frame or pit outside in the shade, after the first watering, and cover pots with 6" of sand, surrounding the sides well. Thus they will be cool and roots will develop. The sand will prevent evaporation.

As soon as they are well rooted (10 to 12 weeks will be required), they can be brought inside. Examine the pots first in about 6 weeks. The roots should penetrate the soil to the sides of the pot. By reversing and tapping edge of pot one can with care lift a pot up to see if roots have reached the proper stage. There is no use to try to force the bulbs before abundant root development is reached. Only failure results.

The room temperature for forcing can be about 55° at night. Not much warmer during day. Set pots in a sunny window. Shift Daffodils to the garden when through blooming as they cannot be forced two years in succession.

Trumpet Daffodils are hardy north and south but as they do not succeed in the tropics, do not plant in S. Fla. The following list of superb varieties are offered in large round bulbs. Plant one or more of each and really learn about Daffodils. If not stated, the price per doz. is 10 times the price per bulb. In the description, E. means early; M., mid season, and L., late blooming.

Aerolite. Pure golden daffodil. Very large but beautifully proportioned and graceful. Medium early. 30c ea.

Alasnam. Wide, densely frilled trumpet of pure deep yellow, a shade deeper than perianth. Much earlier and better than King Alfred. 25c ea.

Dawson City. Golden yellow. Broad flat flower of smooth substance, with flanged trumpet. Fine garden and exhibition variety. L. 30c

Dick Wellband. (Incomp.). Exceptionally fine white with orange cup. 35c.

Eve. New, fine pure white. 60c.

Fortune. A giant Incomparabilis of perfect form, smooth texture, very large open and beautifully frilled trumpet of soft orange and creamy yellow petals. E. 40c.

Golden Harvest. Deep golden yellow. Petals well formed and overlapping. Trumpet well shaped and proportioned, rolled back at brim. One of the largest in existence. M. 35c.

John Evelyn. (Incomparabilis). Snow white with dark cream cup, tinted apricot. Very large and very outstanding. 40c.

King Alfred. Favorite of florists and gardeners. Deep golden yellow, exquisite and graceful. Good blooming size, rounds, 15c ea., \$1.40 doz. Per 100, \$7.75 by express, f.o.b. No. 1 round, 25c ea., \$2.50 per doz. Per 100 \$12.50, f.o.b.

Daffodil Collection. One each of the above 10 varieties, value \$3.50 for \$3.15.

Habranthus. Formerly considered as a subgenus of Hippeastrum. When this genus was reorganized, most of the species were placed in Amaryllis and this subgenus became the genus Habranthus. Usually they have a one flowered scape. The culture is about the same as for Amaryllis advena as they are usually fall bloomers and winter growers.

Habranthus brachyandrus. The long tubular flower is very striking in color, lavender pink with a deep purple throat and is quite large. They begin to flower in late summer and continue into the fall. Hence should be ordered early. 75c.

H. rubustus. Baker says the flower is rose red. It appears lavender pink to me. 25c ea. \$2.50 per doz.

Haemanthus. This south African genus is very rare in cultivation. Very few have ever seen one. They are hardy only in an almost frost-free climate like So. Calif. or Florida. In their habitat, the following grow in cool, moist forest glades where there is little sun but plenty of light and where breezes keep the air in motion. These are the famous and rare Blood Lilies of South Africa.

Culture They should be grown in pots except in climates like Florida and So. Calif. The soil should be equal parts of loam, coarse sand and peat or leaf mould made thoroly fine. Drainage should be perfect. A tablespoonful of bone meal to each pot is useful. H. Katherinae should be planted about 3" deep; puniceus, coccineus and carneus covered about 1" to 2". The bulb of albiflos may extend about half above soil surface. An abundance of water at all times when growing is required but rather on dry side when dormant. Additional culture information is given with species. All are natives of South Africa. All are easy to propogate from the freely produced seed. Grow them as advised for Clivia seed.

Haemanthus Katherinae. The bright red flowers fill a large rounded umbel often 10" or more in diameter. I have counted nearly 125 in an umbel. The broad banana-like foliage droops gracefully into an umbrella form. Scarlet seeds follow the flowers. A plant in flower is an unforgettable sight of tropic beauty. The entire plant is of quite large proportions, the foliage and flower umbel reaching a height of 30" to 36". Introduced from Natal in 1877, they are yet very rare. Give them a large pot, about 12". Plant with top of bulb at soil surface.

Katherinae is almost evergreen but usually tops either die or decline in January. About that time, the neck splits due to pressure of new growth. We can usually deliver from Jan. until late March but early ordering is advisable. We usually delay shipment by mail to north when there is danger of freezing. Express is always safe. Katherinae should never be entirely dried off but less water is needed in winter as it is a summer grower. Former prices were \$10.00 and \$12.50 ea. In the spring we reduced these prices and are now again reducing them for next Jan.-Feb. delivery. Price, good flowering size for \$6.00. Top size, \$8.00. Order well in advance as we sell out early.

H. albiflos. Two or more rather stiff erect evergreen leaves. The small white flowers, 100 or more, are in a dense umbel. A rare and unusual plant. It is evergreen and must never be dried off. But most growth is made in summer and more water is needed then. Flowers here in late fall. Leaves burn badly in sun. \$3.00.

H. coccineus. This is the true Blood Lily altho all Haemanthus are referred to as Blood Lilies even tho one has white and another flesh pink flowers. This very rare Amaryllid usually has only two semi-erect leaves. They grow all winter after which they should be entirely dry until about Aug. Then watered only a

little at first. The flower scape appears, preceding foliage. This scape furnishes part of the floral display, being marked by contrasting red spots on a bright background. The 4" umbel consists of very numerous small, densely placed blood red flowers. These are followed by the fruits which turn red upon ripening. Each fruit will contain one or more large seeds. In the south plant the bulbs with top even with soil surface. Half shade. Easy in pots where half of bulb may be above the soil. Stock limited and rare. As they flower very early, unless you order in early Sept., at the latest the bulbs are likely to have flowered in storage. If bulbs have flowered we will deliver anyway unless you specify that we may only send a bulb that has not yet flowered. It is not a bad idea to get a bulb when you are able. Price \$3.00. Extra large bulb that should make 2 or 3 flower scapes, \$4.00. As a pot plant, give all *Haemanthus* a cool room, 35° to about 70°.

Hemerocallis. Daylily. The flowers range in color from dark bronzy red, thru pastel tones of pink to orange and yellow. They are borne on a branching scape well above the foliage.

The Greek name, meaning "beautiful for a day," refers to an individual flower. But these are so freely produced, thru a long period, that "beautiful every day" would be more apt, as a collection of several sorts show masses of flowers thruout the spring, summer and fall and here we often have some winter flowers. The modern sobriquet of "The Perennial Supreme" is well deserved.

Culture. While their beauty is their greatest recommendation, their easy culture and hardiness add to their desirability. I have known abandoned plants here, where we have arid, hot summers, to persist for years. They grow well in full sun. Slight shade is better. If given constant moisture about their roots, preserving this and coolness of the earth with a good mulch, the plants are ideally situated and respond with generosity. They are hardy even in severe winters in the north. They are fibrous rooted, not bulbs, and must be planted at once when received. Altho they can be moved any time, it is better to ship from late fall to early spring.

They are an almost perfect border or landscape plant, never have to be dug and replanted. All that you must do for them is keep the weeds down and water. A heavy leafy mulch helps every way.

In Daylilies, the sepals are colored and petal-like and are an essential part of the floral display.

Hemerocallis Araby. A lovely pastel color, with the effect of bronze on gold dust. 30". Blooms early. \$1.00.

H. Bagdad. Coppery red over orange veins. Mid-zone of madder brown. Very striking large flowers. 3 ft. June-July. 50c.

H. Bijou. 24". June-July. Orange, overcast with rich fulvous red. 50c.

H. Boutonierre. 36" Rosy peach petals. Grassy foliage. July-Aug. 75c

H. Calypso. Large, fragrant lemon yellow flowers. Opens in evening. 42". June-August. 30c ea.

H. Cecil Houdyshel. A Dr. Traub origination. A deep crimson with an old copper shade that makes it outstanding in our garden. Slight shade gives better color to flowers. 3 ft. June-July. \$2.00.

H. Chengtu. Brilliant coppery orange-red with carmine mid-zone. 3 ft. July-Sept. 50c.

H. Cinnabar. Cinnamon sprinkled over orange, gold-glistening. 30". July-Aug. 50c.

H. Crown Prince. Color like Mikado. 30". June-Aug. 25c ea. Per doz. \$2.25.

H. Dauntless. Cadmium yellow. Fulvous red blended in mid-zone. Pastel effect. 30". June-Aug. 75c.

H. E. A. Bowles. 48". Large ruffled flowers of deep red-orange blended with gold. Early. 75c.

H. Evangeline. 40". Large rosy flowers with wine purple eye zone. Early \$1.50.

H. Florham. Still popular old hybrid. Large, golden yellow. May-July. 50c

H. Florida. Pastel shades. Light chrome yellow with rose blush. Darker mid-zone. July-Aug. \$2.00.

H. Fragrance. A fine deep yellow. Fragrant. \$1.50.
H. Iris Perry. 36". July-Sept. Orange-bronze. 50c
H. Kanapaha. 36". Clear cardinal red. The best red that I have seen. June-July. \$6.00.
H. Kwanso. The Double Orange Daylily. 25c ea. 3 for 50c.
H. Linda. Petals, ruffled golden yellow, flecked with cinnamon, and a rose zone. Sepals, pure yellow. Very lovely. June-July. 50c.
H. Mandarin. 48". Lemon yellow. June-July. 50c.
H. Margaret Perry. Brilliant orange-scarlet. 4 ft. July-Aug. 35c.
H. Mikado. Orange with mahogany-red zone. A favorite. 3 ft. May-July. 35c.
H. Modesty. 36". Large, pale creamy yellow. Our nearest to white 75c.
H. Nubiana. Dark chocolate-red with yellow stripe in petals. One of the darkest varieties. 2 ft. 60c.
H. Old Vintage. 54". Wine-purple with yellow throat. Ruffled petals. Very profuse. April-May. \$1.00.
H. Patricia. Pale yellow. Large fragrant flowers. 30". July-Aug. 50c.
H. Purple Waters. 36". Wine-purple with ruffled petals. May-June. \$1.50.
H. Radiant. Rich orange. 42". June-July. 50c.
H. Rajah. Deep English red with darker red veins. Garnet red eye-zone. 40". July-Aug. 75c.
H. Rosita. Near carmine-crimson with coppery red tone. 36". Part shade preferred. \$1.00.
H. Rosalind. Superior clon of *H. fulva rosea*, famous pink Daylily. A very delightful pastel shade of rosy pink. \$3.00.
H. Serenade. Rose-fulvous markings on apricot cream. Faintly overcast darker. 4 ft. June-July. 75c.
H. Sibyl. Dark purple-red petals, lighter sepals. \$3.00.
H. Soudan. Lemon yellow. Broad wavy petals and sepals. 3 ft. June-July. 50c.
H. Spitfire. Seems never to quit blooming in spring, summer and fall. Fiery red with yellow midrib, yellow throat. Small flowers but in great profusion. 2½ ft. \$1.50.
H. Vesta. Deep orange with glistening gold sheen. 30". May-July. 50c.
H. Vulcan. Dark maroon-red. 30". July-Aug. \$2.00.
H. Wau Bun. Large apricot flowers, sprinkled fulvous red. The twisted and curved petals add to its beauty. 75c.
Leucojum aestivum. Snow Flakes. Hardy in north. Blooms often before snow is gone. Dainty white flowers, each petal with a vivid green dot. Plant 4" to 6" deep. Do well in full sun, a little better in half shade. 15c each. \$1.00 doz.

Lycoris are natives of Japan and China. They are among our very best bulbs for the south and two at least, *L. squamigera* and *L. purpurea* are quite hardy in the north. This is because the bulbs remain dormant until very late winter or early spring when the foliage appears, makes rapid growth and dies back by early summer. Most other species are winter growers and that eliminates them for northern gardens. Cover the bulbs by about 4" of soil in full sun exposure. Leaf mould or peat added to soil is a help. *Lycoris* are recommended by many for pot culture. If one gives them a very cool room,—not a "hot house" they should succeed. Imitate Calif. winter climate, where temperatures in winter range from 32° to 60°. Most of them are hardy to Washington, D. C. and even in So. Kansas a few grow them in protected places with some protection.

Lycoris aurea. Golden Spider Lily. This is the famous Hurricane Lily of St. Augustine, Fla. It is one of nature's most beautiful flowers, but rare and expensive. They must be ordered before Sept. 15 as they bloom very early. Hardy only in deep south. \$2.50 ea.

L. purpurea. Close to *squamigera*. But not a variety of it. The purplish flowers have vivid blue markings. Perfectly hardy in north. Rare. \$3.00.

L. radiata. Red Spider Lily. Coral red flowers in a several flowered umbel in Sept. Flowers are followed by the foliage. Flowers have narrow undulate petals and long stamens which give the "spidery" appearance. This is a common flower in the south and one of our most beautiful. Hardy along coast to N. Car. and on west Coast to Vancouver. 35c ea. Larger forcing size, 50c. For

a large planting outdoors we offer smaller bulbs, some of which may flower the first year. Per 100, \$7.50. Per 50, \$4.00.

L. squamigera. Amaryllis Halli. The hardy Amaryllis that resembles *Brunsvigia rosea* (*Amaryllis belladonna*). \$1.00 ea.

Nerine. This genus is seldom seen in America, altho it is one of the most beautiful and varied of the Amaryllids. They bloom in succession from Aug. 1 thru January. They are hardy only in the south where temperatures seldom go under 26°. But they are one of the finest pot bulbs. **Culture.** Pot or plant in mildly acid to neutral soil. Sandy soils are more likely to be acid and drainage is better. Use peat or leaf mould to bring soil to pH 6.5 or 7. Alkaline soil is the most frequent cause of failure. Pot bulbs at once with bulb well covered and 2" to 4" deep in gardens. Full sun. When foliage yellows withhold water.

Nerine Bowdenii. 10 or more flowers in an umbel 9" wide on a 15" scape. One of the finest Nerines and very easy. \$1.00 and \$1.50 ea.

N. filifolia. The bulbs are very small, only 1/2" diam. Round grassy foliage. Very pretty flowers in an umbel, pink, wavy or crinkled petals on a 10" scape. Our stock is so reduced we could not list last spring and almost reluctantly we decided to list this fall. So we offer only for early orders because if you want to get a flower you must order before Sept. 15. Earlier if possible. If ordered too late for flowers you will still get good increase of bulbs and there is no assurance that a bulb moved now will flower this fall but they often do. 25c ea. \$2.50 doz.

N. Fothergilli. Its full name is *Nerine curvifolia*, var. *Fothergilli major*, Which is too long. It is usually shortened to the name we list. It is so outstanding and beautiful that it deserves sufficient attention to give the full name. The flowers are a rich red or scarlet that is iridescent in a way to remind one of polished gold stone. This and the following hybrid bloom in late summer or early fall just preceding the appearance of foliage. This follows a period of a summer dormant period when they must be kept dry. The two varieties are ideal for potting and do not need to be repotted for several years. In pots cover the bulbs only to the neck. Deep bulbs growing at a cool temperature all winter and spring until foliage yellows. \$2.50 ea.

N. Fothergilli hybrids. Much like the parent but colors are from salmon orange to shades of red. No choice of shades possible. These like their seed parent, *N. fothergilli* should be kept dry in summer when dormant. Water in Sept. \$2.00.

N. Magnifice. Its name suggests its quality, "Magnificent". It is a fine pot bulb, or garden bulb in climates like So. Calif. The flowers are more pink and larger than those of Bowdeni. Winter delivery. \$2.00.

N. massonorum. Earliest, often mid-July. Foliage like *N. filifolia*. Flowers resemble it but smaller, on a shorter scape. Very long spathe. Delivery any time. 35c each.

N. rosea-crispa. Hybrid of *Filifolia* but larger in all parts. Can be kept evergreen or dried off. \$1.00 each.

Sprekelia formosissima superba. Orchid amaryllis. Deep crimson flowers in orchid-like form. Much larger than common type, better color, more flowers. Evergreen. Fine in pots. Culture like Amaryllis. 50c and 75c.

Tulbaghia violacea. Small cousin to Agapanthus. Mauve flowers produced thruout the year, a true ever-bloomer. Foliage has garlic odor if bruised. An acquisition for pot culture. 25c ea. 5 for \$1.00. \$2.00 per doz.

T. fragrans. This much larger species has a large, true bulb, with glaucous green foliage, 18" long and 1" wide. It has no allium odor. The plant is a profuse winter bloomer in a cool room, with a few flowers in summer. It was introduced to this country only a very few years ago and so far as we can learn, only one other dealer lists it. It has larger fragrant flowers than violacease in the same color. Evergreen. Since it increases rapidly the bulbs are a good investment for dealers or for plant exchanging. \$2.50.

Vallota purpurea. (or *V. speciosa*). Scarborough Lily. This is a hard to find old favorite. Leaves similar to Amaryllis. The scarlet flowers, funnel shaped are

in an unbel. Flowers late summer usually. This is one of our best amaryllids for greenhouse culture. In potting use plenty of drainage. Soil should be equal parts rich sandy loam, peat and cow manure. Add a little sharp coarse sand and granular charcoal if available. Use small pots and shift to larger as necessary. Vallotas resent being moved and should not be repotted for several years. They are not safe under garden or field culture and that has almost led to extinction of commercial stocks in U. S. Under culture the plants do not lose foliage and even if they do the bulbs must not be dried off. Keep at least slightly moist when dormant. Only the gift of a friend makes this offering possible. Get them now as we may sell out at \$2.50 ea.

Zephyranthes. Fairy lilies. The smallest Amaryllid, 6"-12" tall. Fine in beds or borders. Hardy in middle south. In north dig and store. They may be grown in pots. Give acid soil, sandy loam with leaf mould or peat. Full sun or slight shade.

Zephyranthes grandiflora. The largest Zephyranthes and the best pink. It is very easy to grow. In the south, its habit of flowering every time it rains in summer gives it the name of Pink Rain Lily. Small bulbs 15c ea. Large 25c.

The Alliae, or onions are now included in the Amaryllis Family. The following Alliums are useful as foods as well as ornamental. Culture simple and easy.

Allium schoenoprasum. True Chives. Small clumps, 10c, 3 for 25c.

A. tuberosum. Japanese Garlic. Deliciously flavored leaves. Evergreen and probably not hardy in north. 25c.

A. ampeloprasum. Spanish Garlic or Burbank's Garlic. This is the largest, sweetest, juiciest garlic and the easiest to peel. It has a 30" flower scape with a large round umbel of white flowers. An ornament in the herb garden. Rapid multiplier. Large bulbs, 15c. \$1.00 doz.

The following are purely ornamental Alliae, not edible.

A. triquetrum. A fine white Allium for pots or shade garden. Being a winter grower it is not hardy in the upper north. Prefers shade. 10c. 4 for 25c 60c doz.

Brodiaea uniflora. Lovely porcelain blue flowers on a low plant. Usually grown in pots in north but a customer reported them hardy in Ohio. 6 bulbs in a 4" pot will go well with Oxalis in your kitchen window garden. Must have a cool room. 6 bulbs for 25c. 45c doz. **Var. alba.** We have a very few of the white variety at 10c ea. 80c doz.

BULBS FOR CHRISTMAS PRESENTS

Give bulbs or orchids for Christmas, birthday, Mother's Day, Anniversary or any time a present is desired. They are ideal presents for flower lovers. It is much easier to order bulbs or orchids than to shop in the crowds. There is a saving too, because while books, magazine subscriptions, toilet accessories, jewelry and almost every gift item one can think of, has risen in cost, bulbs, cut flowers, orchids (both cut flowers and plants), are actually lower in price. Nothing gives more pleasure than flowers, bulbs or plants and they cost less. On top of these advantages, one can shop by mail with confidence and avoid the crowds. For books, give garden books.

IRIS FAMILY—Iridaceae

The Iris is the type genus of this family, which includes Iris, Gladiolus, Watsonias, Freesias, Sparaxis, Tritonias, Babianas, etc., listed on the following pages.

Tall Bearded Iris. A garden is not complete without a good collection of the newer varieties of bearded Iris. Our grandparents loved them and grew quantities even though they had only blue and white and these were very inferior to the present tall, large flowered Iris in blue, white, yellow, red, pink and blends of all kinds and combinations.

Iris were well named for the goddess of the rainbow. In mythology, Iris was attendant to Juno and carried her messages and sometimes also for Jupiter.

She was as fleet even as Mercury and her passage through the air was so swift that she could not be seen. But her flowing iridescent robe, the rainbow, could be seen. Every color of Iris' robe (the rainbow), of ancient mythology can be seen in the modern Iris and perhaps more tints.

Iris furnish you cut flowers for the house, which you can't buy at the florists. Nor can you get any others, unless orchids, that will equal their rich beauty.

It is not too late to plant Iris for spring blooming. In fact a very large section of Iris growers prefer to plant in the fall up to Dec. 1. I have planted later than that and had many flowers result.

If you are interested in the most recent and hence the very best of all, priced at 50c to \$15.00 each, and plan to place an order, send for our price list, "The Iris 400." These are the aristocrats of iris. In this list we offer free premiums of your own selection, of 25% to 100% on orders from \$10.00 to \$100.00.

If you do not feel that you can afford this range of prices, but still wish to purchase some good iris at 15c to \$1.00 ea., refer to our spring 1949 catalog, or send for it. We are very short of this catalog and must limit their distribution. None are free. If wanted, send a dime. Or send 50c for a rhizome of Golden Cataract, pure yellow fall bloomer, and request that we place a spring catalog in the package.

Dutch Iris. These are bulbous Iris. The flowers are not fragile like bearded Iris and they are therefore very useful for cutting.

Culture. They should be planted in the fall before Oct. 30 as the bulbs often deteriorate after that date. Later plantings may succeed if bulbs are good and not infested with plant lice. Plant 1" to 3" apart and 3" to 4" deep depending on size of bulbs. They are hardy in milder sections of north but a mulch is advisable. Full sun or slight shade.

Some varieties flower from much smaller bulbs and never make as large bulbs as others, therefore no definite size is specified but all are flowering sized bulbs. We are lowering prices where possible.

Early Snow. Tall, early white. 15c, 2 for 25c. 85c doz.

Imperator. The best tall, dark blue. 2 for 15c. 65c doz.

Wedgewood. Lovely light, "Wedgewood" blue. The earliest to flower. 3 for 25c. 85c doz.

Yellow Queen. The most popular, deep golden yellow. 2 for 15c. 65c doz.

Assorted Varieties. Most colors are in this mixture and many that are not listed above. 2 for 15c. 65c doz.

Iris Stylosa as it is commonly called is more properly *I. unguicularis*, the latter having been first used. This is the best winter blooming iris. This iris is hardy in England and in milder sections of our north. Quite easy in the middle south. The blue flowers are most welcome in mid-winter. We deliver these about Nov., or when cool. Plant at once in half shade and keep wet. 35c. \$3.50 doz.

Iris Spuria have tall stems often 3 or 4 ft. They are very attractive in the garden and make excellent cut flowers. Each spike develops 2 or 3 flowers in succession. These may be used in arrangements or in any sort of floral construction. The flowers are often used in corsages. Iris spuria are a regular flower market item and in excellent demand by florists. Calif. ships them east where they could grow their own,—but later. **Culture.** Set the rhizomes shallow as for Bearded Iris. Keep moist until they start. Full sun exposure or part shade. Altho they do well under ordinary garden culture they will do better, grow larger and finer plants and flowers if given half shade, abundant moisture and perhaps a little mulch.

Iris spuria aurea. Pure daffodil yellow. 50c ea. \$4.50 doz.

I. spuria achroleuca. White with a yellow blotch on falls. There are variations in this species and ours is a superior one. 35c ea. \$3.25 doz.

GLADIOLUS

How to Grow Gladiolus. Glads planted Nov. 15 to Mar. 1 in Southern California and thruout the south (a little later in Northern California and early as

possible in spring in the east) are reasonably sure to escape the attack of thrips. Our Glad bulbs are especially grown for this purpose, matured early and dug in August. But if you plant recently dug bulbs you will gain nothing; they will continue their rest of three months before starting.

Thrips are very small insects that suck the juices from the plant. They cause the flowers to wither or appear burned, and appear only after weather becomes warm. To avoid the damage thrips do, four measures are effective. Plant early. Plant clean, treated bulbs. Keep them reasonably moist and well cultivated, with no weeds.

The total elimination of thrips appears impossible. A few are bound to appear as the weather becomes warm.

We therefore begin to dust with D.D.T. when plants are about 8" tall. Any hand duster will do. We use a powder containing 5% D.D.T., 45% Sulphur and 50% inert ingredients. Dust in early morning when the plants are moist with dew. That will cause the powder to stick and remain effective for a week or two. Four to six dustings before flowering will control thrips tho in a field where various sizes have been planted and where flowering lasts for several weeks we consider it advisable to dust again once or more, the next morning after flowers are cut. We have not seen flowers or buds damaged by D.D.T. This powder can be had most anywhere under one of several trade names.

Some have reported that D.D.T. is losing its effectiveness. If you do not get a good kill of thrips, try Clordane dust, 5% or 10%. This dust will also kill ants, cutworms, etc., but don't get it on vegetables as it is quite poisonous. One should be careful about breathing any poison dust or spray.

Treating Bulbs. We have recommended various dips and treatments for bulbs but have rejected all when we later found that some injuries resulted to the bulbs. Now we dust our bulbs with the same D.D.T. powder. It keeps aphids and mealy bugs away and kills the thrips.

Naphthalene flakes sprinkled in the bulb containers which are then covered and allowed to remain about three weeks, will usually kill all thrips. But too long an exposure results in a little damage to the bulbs.

The Lysol treatment kills thrips and their eggs. It also is useful in controlling the various bacterial and fungus diseases that attack the bulbs. Mix 4 teaspoonfuls Lysol to each gallon of water. Soak the bulbs in this not over 5 hours. Do this just before planting and plant in moist soil. Unfavorable results have been reported from soaking too long or by planting in a dry soil and thus prolonging the action of the Lysol. Some growers do not recommend this treatment.

The bulbs we sell you have been treated with D.D.T. Plant large bulbs 4" or 5" deep; small 3"; bubblets 2". Twice their diameter apart. One can plant two rows, staggered in a 4" wide furrow or closer in a single row. Rows about 20" apart. Alkaline soils produce poor Glads. Soil should be neutral to mildly acid. Leaf mould or peat added is useful. Domestic peat is often harmful because alkaline. Use no fresh manure, but well rotted manure is good. Top mulch of leaf mould or imported peat is good.

Keep Glads growing with plenty of water and best culture for about two months after flowering. It is best to dig bulbs in the south, and necessary in the north.

Sizes and Prices. L means "large," size 1 and 2, 1 $\frac{1}{4}$ "-1 $\frac{1}{2}$ " (or more) in diameter. M. is "medium" and includes No. 3 and 4 sizes, $\frac{3}{4}$ " to 1 $\frac{1}{4}$ " diam. S. means "small," under $\frac{3}{4}$ " diam. Large and medium bulbs give good long spikes. Small bulbs usually bloom in most varieties and when planted early, given good culture and plenty of water they usually make fairly long spikes. Early planted bubblets often flower. Large bulbs bloom earlier and throw more and longer spikes. **Prices** are for one bulb as elsewhere in this catalog. A dozen, all of one sort, costs ten times the price of one unless otherwise stated. Six are sold at dozen rate. Don't forget **Sales Tax** in California.

Substitution. If you order early there is likely to be no substitution, but when out of a variety we send another as nearly like it as possible and of equal or greater value. If you do not approve this, request no substitution.

We are offering many of the newer and better varieties that have been in-

creased to a quantity where they can be sold at medium prices. A few of the older ones, still desirable, are retained.

Please Note. The following descriptions are brief, to save space. The prices are low, to save you money. But every one ranks tops in its color class.

Big Top. A huge soft, pink with carmine feather, 6 or more open at one time, on a 6-ft. stem. 2 for 25c. \$1.25 per doz.

Burma. Large, very deep rose, deeply ruffled. Very many flowers open at one time. One of the most beautiful. 20c each.

Capehart. Light salmon rose. 6 to 8 open. Early commercial cut flower. 7c. 65c doz.

Corona. Creamy white with picotee edging of pink. An unusual and beautiful combination of color. 10c. \$1.00 doz.

Elizabeth The Queen. Deep lavender or orchid purple. Very large deeply ruffled flowers, many open. One flower makes a perfect corsage. Many consider this the most beautiful glad. 20c each. \$1.65 doz.

Ethel Cave Cole. Very large soft pink flowers, as many as 10 open at one time. In any flower market this, when offered, is the favorite of florists. 2 for 15c. 65c doz.

Los Angeles. Once the most popular on the L. A. flower market, it is now chiefly grown for winter flowers, commercially. Still very useful for early blooming in the garden. As it makes many side spikes, one bulb can make more florets than any other known variety. To do that plant very early so that they flower early. They don't like hot weather. Plant 6" to 1 ft. apart and they will look like a Gladiolus "bush." They are always thirsty. If you give them "too much" water, it may be enough to produce a huge growth. Flowers are small but beautiful in color. 6c each. 60c doz.

Margaret Beaton. Large white with scarlet throat. A standard for cut flowers. 6c. 60c doz.

Mother Kadel. One of the finest pure yellows. 8c each. 80c doz.

Pacifica, very early, tall large white, much used by florists. Healthy and easy to grow. 8c each. 75c doz.

Red Charm. Rightly named a charming red of pure color, no markings. An outstanding exhibition and commercial flower. 15c. \$1.50 doz.

Red Unknown. Fine vivid color, tall spikes and very early. The label was lost but it is so good and sells so well as a cut flower that we continue to propagate it. Because unnamed we price it low. L. 8c ea. 75c doz.

Snow Princess. Usually accepted as the best pure white commercial gladiolus. 10c. \$1.00 doz.

Yellow Perfection. Tall, medium yellow. 7c ea. 70c doz.

Assorted Varieties. This is an accidental mixture and thus not a balanced mixture. For the same reason it may contain anything. 5c each. 50c doz.

Gladiolus nanus, Baby Glads. These small, exquisite Glads are suitable for growing in pots in the north as they range in height from 1' to 2'. They must be planted in the fall as bulbs do not keep until spring. In the south they may be grown in the outside garden and are a little hardier than Freesias. They are winter growers and do not do well in warm weather.

Mrs. Foster's Purple. This is possibly a species, but is one of the best we grow. Its vivid color makes it most desirable for cutting. 50c per bulb.

Charm. A fine, rosy lavender. 20c each.

Assorted colors, pink and red tones. 10c each.

WATSONIAS

Close relative of the Gladiolus but winter growing and earlier in bloom. They grow as tall or taller. The flowers are smaller but in very lovely spikes useful for cutting. The colors are varied, in most pleasing pastel tones, and bloom early if planted early. Better even the second and third years. Easy to have them for Decoration Day or before in Southern California. In most cases we have discarded names and substituted the name of their color.

Culture: About the same as Glads. In the south they must be planted in early

fall (Sept. best) as the bulbs sprout early. Hardy at Washington, D. C., and probably in all climates where temperatures do not go below zero, if planted in a well protected place, 4" deep and well mulched. On the border line of their hardiness, as in Virginia, they have been grown and flowered in an unheated cloth house and survived outside temperatures of slightly under zero. They must be grown very cool in greenhouses.

Dazzler. A dazzling scarlet, profuse in spring with a few flowers throughout the year. 25c. \$2.50 doz.

Giant Lavender, in name only as the flowers are a gorgeous purple. This is the best Watsonia I have ever seen. Often 6-ft. tall with much larger flowers than any other sort known. 35c each. 6 for \$1.75. \$3.00 doz.

Assorted varieties. Many colors will be placed in this mixture in the early season but later there may be fewer. 15c ea. 75c doz.

Please Note. The extremely cold winter last season prevented the development of large corms on many of our varieties. The above are the only ones we will sell this year. This answers all inquiries for other sorts, before they are made.

Delivery will be made in time to plant for Decoration Day flowers.

Other Irises. The following, from Freesias to Moraea, all belong to the Iris family.

How to Grow Freesias, Sparaxis, Ixias, Tritonias, Babianas and Baby Glads. (See Gladiolus nanus under Gladiolus.)

This closely related group of bulbs have similar culture requirements. All are hardy only in the south where winter temperatures go no lower than about 26 degrees. At about that temperature some injury results but bulbs survive. They mature if even several degrees colder. Where temperatures are about 10 degrees colder they may be grown in cold frames, cloth house or unheated houses.

In the north, all are fine bulbs for pots in a cool room in the house or greenhouse. As they are naturally winter growers, they must have cool conditions and they do not flower well when forced at a temperature range of much above 40 to 60 degrees.

They should be grown in flats 4" deep or in bulb pots or pans. A friable sandy loam with much leaf mould added is the best soil. If part of the humus is from composted, well rotted manure, better flowers result. Plant 6 to 8 bulbs in a 5" to 7" pot and cover lightly.

In the outside garden, bulbs may be planted 2" to 3" deep and 10 to 20 to the foot, according to size. Give full sun exposure. Plant or pot early. Sept. and Oct. are best months. Good results follow Nov. planting and Dec. planted bulbs usually flower well but stems are shorter and flowers are usually a little smaller. We supply the largest bulbs we can grow or buy as they give stronger plants, larger and better flowers and are more sure to give maximum results than small bulbs.

Freesias are the most deliciously fragrant flowers one can grow. The fragrance is not too heavy and is not cloying in the house or outside.

Since many of our customers have bought our usual varieties of Freesias in the past we are providing an entirely new list of the latest introductions in order that you may have the pleasure of seeing something new in Freesias. The fragrance tho remains the same. It can't be improved.

We offer **Mammouth White**, pure white flowers; **Mammouth Yellow**, pure daffodil yellow; **Oriole**, deep orange and **Blanch Blue**, we believe this may be the best and largest blue.

All are large forcing size corms, as are necessary for success in pot culture and equally desirable for the outdoor garden as they will have large flowers on longer scapes. Price, 15c each. 2 for 25c. \$1.25 doz. The quantity rates apply only to the bulbs in one bag. Thus one of each if separately labelled, take the single rate.

Sparaxis are closely related to Freesias, but are far more colorful. The colors range thru vivid tones of bright red, crimson, carmine, pink, apricot and sometimes an almost white one. A few reds are almost maroon. There is usually a contrasting color in throat. They are a little taller than Freesias and the flowers are larger, more flat and wide open. For pots, or winter flowers, few plants will create as much bright color as Sparaxis.

Houdyshel Hybrid Sparaxis. We have grown and selected seedlings from the original Dutch varieties and now have a much more colorful strain. The colors mentioned above are descriptive of this strain and we can add that occasionally one finds colors approaching yellow, or blue. 2 for 15c. 65c doz. Per 100, \$2.75.

Small bulbs bloom well in the garden and even in pots they usually flower. Price 35c doz. Per 100, \$1.75. The 100 rate is our wholesale price which we will allow to garden clubs, dealers or any one who gets up a club order or even wishes to plant a long row or a bed. We have a reduced acreage and must reduce our planting of Ixias, Sparaxis and some others. Hence the low priced rates.

Ixias are 2 to 3-ft. tall. They have slender, wiry stems and are nice for cutting. The flowers close at night and on dark days but the long closed buds look like pink striped oblong pieces of bright colored candy and sometimes I think they are prettier than the open flowers.

Ixias, assorted colors, 3 for 15c. 40c doz. Per 100, \$2.00.

Babianas. Blue flowers for the winter garden are hard to find. **Bibianas** are intense blue to blue violet. **Culture** exactly like Freesias.

Babiana hybrids, mostly blue tones, 3 for 15c, 50c doz.

Tritonia lineata. This interesting species grows 18" tall, or more. Flowers are white, crossed by grey lines—hence "lineata." 3 for 15c. 45c doz.

T. hyalina. Sometimes called "Flame Freesias." They are shades of vivid orange red. Some one should cross them on "lineata" and get an orange 18" tall. 15c each. 85c doz.

Marica gracilis. Walking Iris or Apostle Plant. The fugitive 2" flowers, white and blue with yellow and brown markings in center, are lovely. The flowers are followed by a small plant at end of leaf-like scape. These become heavy and bend over to ground and take root, thus walking away from mother plant. **Culture:** give nearly full shade, plenty of water, never drying out. Tender tropical but grown in pots in north. 50c each.

Moraea polystachia. African representative of the Irises. 2-ft. stems, covered by a multitude of flowers, mauve and violet with yellow in throat. Blooms profusely in the winter in California, beginning 6 weeks after planting or in pots in the north. **Culture:** like freesias. 2 for 15c. 50c doz.

LILY FAMILY—Liliaceae

The type species is *Lilium*, or true Lily. Many call Crinums, Callas, Cannas or any bulbs "Lilies," but this is an error.

Lilium. This genus includes all true Lilies. **Culture:** It is better to plant all true Lilies in the fall. Plant about 4" to 6" deep to top of bulb. These lilies will all be hardy in milder northern states but a good mulch helps them in all climates and in all seasons. They need a mildly acid soil. A great deal of humus, as leaf mould or peat, should be mixed with soil. Lilies must have their feet cool and their heads warm. Therefore planted among low shrubs or plants where tops are in the sun is ideal. They do very well in the half shade of trees or a lath house.

Lilium Maxwill. This is a hybrid of *L. Maximowiczii* and *Willmottiae*. Both parents are Asiatic natives but their hybrid is one of the most hardy lilies, vigorous and easy to grow. Flowers are yellow-orange with brown spots. A vivid outstanding lily. 75c.

L. Parryi. A California native. Spotted pale yellow flowers. Vigorous and easy to grow. \$1.00.

L. Regale improved. This is a little whiter and better than the wild species. 75c.

The three lilies, all large bulbs for \$2.25. Order early, our stock is small and plant as soon as received.

Roman Hyacinths. Have single flowers, usually, and a less dense raceme than the Dutch Hyacinths but they have equal fragrance and great beauty in the garden or in pots. **Culture:** the same as for Dutch Hyacinths as noted below, either in gardens or pots. Our bulbs are California grown and are twice as good as imported bulbs. **Assorted varieties**, (they may be nearly or all white) 25c each, \$2.00 doz. **Pink.** It is almost impossible to get California grown pink Romans, but we have them for 35c and 50c, or \$3.00 and \$4.50 doz.

Dutch Hyacinths are loved by every one and have been for more than a thousand years. Their exquisite beauty, rare fragrance and easy culture contribute equally to this result.

Culture. Hyacinths are winter hardy but in cold climates a good mulch is advisable. Plant 3" or 4" deep in rich sandy loam containing much humus. For forcing in pots use a 4" or 5" size. Use clean light, sandy soil but no humus or fertilizer. Read our general potting directions. Set the bulb under soil with top just showing. Plunge the pots outside in a cool shady place as recommended for lilies or daffodils. Cover tops of pots with 2" of soil and mulch with straw or leaves. Control the moisture so that they are always moist but never very wet. Drainage under the pots must be good. In about 6 weeks (or longer if necessary) they should be well rooted. They may then be brought into the house to a temperature about the same as for Easter Lilies. In all stages of growth they should be moist but if excessive there is danger of causing the bulbs to rot.

Our bulbs average 16/17 cm. Some are smaller and some larger. Earlier orders will get the large bulbs. Later we may need to send the rather smaller sizes and overcount, but all are blooming sizes. A few of our varieties have become slightly mixed. Thus if you order only one color, there is a possibility that you may get the wrong one. For that reason we offer them much below the standard price. Price in red, pink, or white, 35c each, \$3.50 per doz. If you request it we can label with name of variety.

Assorted varieties, all blooming sizes, \$3.00 doz.

Muscari, Grape Hyacinths, var. Heavenly Blue. Racemes of closely packed, exquisite, tiny blue bells. Fine in pots or garden. Our bulbs are fine and large this year. L. 2 for 15c. 50c doz. Per 100, \$3.50. Blooming size, 35c doz., \$2.25/100.

Scillas are closely related to Hyacinths. All are hardy except *S. peruviana*.

Scilla hispanica. Assorted colors and sizes. Plant in shade. 50c doz.

S. hispanica, var. Excelsior. Giant. dark blue. The best. 20c each. 6 for \$1.00.

S. peruviana. A fine blue flower for pots in the north or for southern gardens. The flower scape is short but above the foliage. The flower head is a compact, conical, wide raceme, ideal in a potted bulb. L. 30c, M. 20c.

S. peruviana. Houdyshel Hybrids. Altho so little appreciated and grown, we think so much of this Scilla that we started growing seedlings and selecting for quality and unusual colors a long time ago. Unexpected results followed, such as prettier foliage, unusual colors such as yellow, tan and pink markings. I will advise you to grow the species listed above in a pot this winter and now or later our strain. These bulbs are assorted. Do not express a color preference. The yellow are not included but if you plant the seed you are very likely to get them. 50c each.

Ornithogalum arabicum. Very showy. The round glossy black ovary in the center of the flower is in striking contrast to the pure white flower. This is hardy only in the south but if the largest bulbs are potted early and handled about the same as lilies they can be had in flower for Easter when white flowers are especially desired. Grow them in a cool room or house. Large bulbs, 20c; 3 for 50c. \$1.50 doz. M. 10c each. 50c doz.

O. nutans. So many of our customers have asked for this that we had to find it, and did. It is a gem of beauty and of unusual coloring. Height 2-ft. Flowers are white inside, green with white margins outside. Since both sides of the petals show, the contrast is very pleasing. This may be grown in pots but the species is hardy and may be grown in the garden in milder climates of the north. The seed grow readily and rapidly come to flowering size. 25c each. \$2.00 doz.

O. umbellatum. True "Star of Bethlehem." The flowers are white, margined green and green on outside of petals. Distinct from nutans and a nice companion to it as it is also hardy outdoors in north or can be grown in pots. 30c each. \$2.25 doz.

Collection, one bulb of each of the Ornithogalums for 60c or 2 of each for \$1.10. It would be interesting to cross them. I do not see why fine hybrids might not be raised, though no one seems to have tried it.

Veltheimia viridifolia. This is one of the most beautiful plants one can grow

in a pot. The glossy vivid green leaves are wavy margined and form a perfect rosette much like a bird's nest fern. From the center arises a scape with tubular drooping flowers closely spaced. The color is a deep rosy or purplish pink of an ineffable tone not found in any other flower. It begins to bloom, if planted early, in So. Calif. gardens or other equally mild climates or in pots in the north by Dec. 15 and continues for nearly 3 months as larger bulbs send up 2 to several spikes. **Culture** is very easy. Use a sandy loam soil to which is added fine screened peat or leaf mould about one-third or fourth. Some charcoal is good. Read general potting directions again. Order before Oct. 1 if possible as foliage starts in storage, but we can ship bulbs with foliage until Jan. 1, usually. Prices 50c and \$1.00 each.

OXALIS FAMILY—*Oxalidaceae*

There are two types, the winter and the summer growing. The summer growing species are listed in our spring catalogs. The following are all winter growers. These are brightest and most vivid of winter flowers for a sunny window or in the garden in the south. They give a profusion of bloom over several months period. A bed looks like a carpet of solid pink, rose, white, yellow, etc. The flowers are large, some over 1" diam.

Culture. Plant about 2" deep, 3" apart. Large bulbs may be farther apart and a little deeper. In pots, the smaller may go 6 in a 4" pot. Use good rich soil, altho they will grow in any soil. Give full sun exposure as they open only in full light and close at night. Order and plant early as they begin to sprout even in August. But they may be shipped even with long sprouts up to mid-October.

Oxalis Bowiei. A large plant with bright rose red flowers. 3 bulbs to a 5" pot. 5c each. 50c doz. \$3.75 per 100. Largest size. 10c each.

O. cernua. Bermuda Buttercup. Deep golden yellow flowers. Very profuse. 5c each. 50c doz. \$3.50 per 100.

O. Grand Duchess. Low growing plants, but give a profusion of very large flowers in three colors. The **Pink**, **Lavender** and **White**, 5c each. 45c doz. \$3.00 per 100. Largest size 10c each.

O. crassipes. Flowers bright rose. Evergreen and everblooming. Increases by tubers and can be moved at any time. Plant at once. Large tubers, 25c each. 6 for \$1.00.

O. crassipes alba. A pure white form. Very pretty and always in bloom. 50c each.

Oxalis Special. The bulbs offered in this lot are assorted in size and color. They will all flower well. Some are accidentally mixed, others are surplus. Price 30 for \$1.00.

THE CALLA LILY FAMILY—*Araceae*

This family contains the so-called Calla Lilies or *Zantedeschia*, Black Callas and other Aroids.

Culture. All *Zantedeschias* and *Arum palaestinum* are suitable for pot culture. *A. palaestinum* will start about Sept. or later. Do not put this bulb into moist soil before that or it will rot. *Zantedeschias*—pink, yellow and spotted leaf—may be potted by about Dec. 15. Don't rush them, as too much water before they start to grow may rot them. They may be held back and started in early spring, here in late February. All do well in the garden in a moist semi-shaded cool place. They are not hardy in cold climates; dig in fall. The White Calla usually blooms in California in the garden in late winter. They may be planted in early fall in pots or garden. All do best in mildly acid soils, on sandy side.

It is an error to keep large White Callas growing continuously. If rested thru summer you will be rewarded with flowers. A rest brings flowers when they start again, often twice or more in a year. The Baby Calla should not be allowed to lose its foliage. Callas as pot plants need some sun, enough to prevent spindly growth, plenty of light and like all plants, good ventilation. They need abundant water but good drainage.

Zantedeschia aethiopica, var. **Baby Calla**. We are positively out of this variety for the present. Please do not order or inquire for it.

Z. aethiopica var. **Godfrey Calla**. This is the medium sized White Calla Lily. Grows to a height of 2 or 3 ft. It is much more suitable for growing in pots than the large type and the flowers are sufficiently large. They also bloom more freely. These are easy in pots, 7" in diam. They should be potted or planted in the garden as early as possible for winter bloom, tho they can usually be held back until mid-winter. Plant with bulbs covered by an inch or so of soil, in a good rich sandy soil with humus added. Blooming sizes at 20c and 35c. Largest bulbs for 50c each.

Z. rehmanni. Dark rose pink variety. 50c.

Z. rehmanni var. **elegans**. This variety has light pink flowers of a lovely shade. It is taller, larger and a better grower than the dark pink. More easy also to force in pots, but when forced many report they produce white flowers. Even in the garden some flowers are white with shell pink tintings. But the white ones are still lovely, more so than the white Aethiopica. 50c ea.

Arum palaestinum. **Black Calla** or **Solomon's Lily**. Foliage and flower like callas. Really black. Plant 4" deep and not before September 1. If not kept perfectly dry until that time the bulbs rot. Flowers in February in pots or in the garden in the south. No bad odor. Best in half shade. Sizes 50c, 75c and \$1.00.

A. italicum. Has attractive green leaves. The flower spathe is long, inflated, ivory white. No "perfume." 50c each.

See Spring Catalog for other Aroids including Fancy Leaf Caladiums.

GESNERIA FAMILY—Gesneriaceae

This family includes Gloxinias, Achimines, Saintpaulias and others. Those mentioned are very popular as house plants and are really priceless possessions when once one has grown them.

Saintpaulias or African Violets. There has been a great increase recently in their popularity. Now everyone must have a few plants in their window garden. They bloom profusely and continuously when well established, if happy. Apparently many amateur gardeners could make them grow but could not make them happy enough to flower.

Our Saintpaulia price list explains the culture so fully that any one will be able both to grow them and to keep them flowering nearly the entire year thru. They will actually flower continuously for years if you meet their culture requirements.

Send us a post card request if you want the price list.

Special Saintpaulia offer. On any order from this price list, for 2 or more plants you may deduct 10% from the price. On orders for the value of \$5.00 to \$10.00 you may deduct 15%. On orders for \$10.00 or more, deduct 25%. As Saintpaulias cannot be shipped in winter, (they are killed by a temperature a little under 40 degrees) we make this offer only for early fall orders. The offer will be cancelled with the beginning of cold weather except to local customers or those to whom we can ship safely in cold weather, as in the deep south or on the west coast. In the spring a new price list will be issued.

This offer is made because we have a large stock at present. They grow rapidly and we will not have bench room in our greenhouse for the natural increase thru the winter. At present our plants are all in flower and I am confident we can send blooming or budded plants on nearly all varieties. This is an opportunity to add to your collection or to start growing this most lovely house plant. If you wish to give a friend a nice present, what could be more appropriate?

Incidentally if you want the price list by air mail send 6c Air Mail stamp.

In order to help you beat the frost dead line for safe shipping we are mentioning 14 of our most popular and desirable Saintpaulias. If you order from this list and tell us you want the price list it will be packed with order. This price list tells you how to keep them flowering all winter, as well as all summer.

The prices attached are list prices. The above discounts apply. The names usually indicate the color hence few descriptions are needed.

Admiral, medium dark blue, \$1.25. **Amethyst**, \$1.25. **Blue Bird**, \$1.50. **Blue Girl**, \$1.25. **Blue Boy Supreme**, \$1.50. **Blushing Maiden**, (color of an embarrassed maiden's face). \$1.25. **Du Pont Blue**, \$1.50. **Mary Wac.**, (Red-purple) \$1.50. **Mentor Boy**, royal purple, \$1.25. **Orchid Girl**, \$1.75. **Purple Prince**, \$1.50. **Red Head**, \$1.50. **Sailor Boy**, light blue, \$1.50. **Sapphire**, \$1.50.

Collection of the entire 14 var. listing for \$20.00, price \$14.50. Please remember these are not small plants that some growers offer at a lower price. They are all good sized to large plants and now in bloom.

Regarding red Saintpaulias. There is no true specimen red. Red-purple more truthfully describes the reds. There are no yellow Saintpaulias. Never will be. This answers inquiries before asking.

Gloxinias and **Achimines** will be offered in our spring catalog.

THE ORCHID FAMILY—*Orchidaceae*

We no longer include our complete list of Orchids in our general catalogs as to do so would require one half of this catalog, and only about one fourth of our customers buy Orchids.

If you are interested in the purchase of good orchid plants it will be sent free for a post card request.

Better still, if you want to know how easy it is to grow orchids, please send 25c for our booklet, "**How To Grow Orchids**." When you learn what equipment is needed and culture requirements you will be better able to decide on whether you wish to grow them. If you are already experienced and have plants you will find our price list offers 25 var. of Cattleyas, many Cymbidiums, Cypripediums and other species.

We include only the most interesting and useful.

We have a large stock of Cymbidiums. They are as easy to grow as Bearded Iris and make good house plants. We believe our new, reduced prices are the lowest to be found anywhere.

The following were omitted from the price list.

Bletilla hyacintha. This terrestrial orchid is hardy and may be grown in the garden. 8 or 10 small orchids are born on a 12" scape. Each flower is about 1½" wide and of true orchid form and color. Plant about 4" or 5" deep in sandy loam enriched by an equal portion of peat or leaf mould. They are hardy in Ohio. Delivery in Nov. Plant at once when received. Two colors, rose purple or white. Price 85c each.

Special. 10 var. of Cattleyas, adult flowering size and some will be in bud sheath or budded. Price \$82.00. These are varieties selected to flower in Spring, Summer, Fall and Winter. We ship in clay pots safely by express f. o. b. Anytime. Best to order early or otherwise a few may have already flowered.

Wire Baskets are needed for growing many orchids as well as for many other plants. We offer the best in appearance and durability, silver bright, electric welded, galvanized baskets. Prices, 10", \$1.10 each or \$10.00 doz. 8", 90c each or \$8.00 doz. At the single rate we ship prepaid parcel rate. At the dozen rate they are shipped by express, f. o. b. These are beautiful, silver grey, non rusting, long lasting. The very best. If you want them by mail, postpaid, send the single price rate for any quantity ordered.

RANUNCULUS AND ANEMONES—*Ranunculaceae*

Ranunculus range in color from red, pink, yellow to white. The strain if well grown produces giant double flowers on tall stems.

Anemones are red, pink, white and blue but blue predominate. The flowers of this strain are mostly single which we prefer in Anemones.

Culture. Best planting time is Sept. Bulbs start better in a medium temperature. In hot weather, start them in a flat in the cool shade of a tree. In cold weather start them in a moderately warm room. When not over 1" high transfer to garden. For pots, place pots when starting the bulbs as directed for the flats. The best soil is rich sandy loam. To heavier soils add much leaf mould. Do not water much when sprouting as the best bulbs will rot if too wet.

We offer only the large size. They cost much more per bulb but each bulb

gives so many flowers that your flowers cost no more and are earlier, larger, better and more sure.

Tecolote Giant Double Ranunculus. 10c each. 50c doz.

Anemones, large size bulbs, same price as Ranunculus.

THE PINEAPPLE FAMILY—*Bromeliaceae*

Bromeliads include Billbergia, Cryptanthus, Aregelia, Tillandsia, Neoregelia and many more genera. We list only Billbergias which include some of the most unusual and fascinating plants. Not only are the flowers in intriguing pastel shades but the floral display is made brilliant by the large vividly colored bracts that cover the scape. The leaves form a rosette and are more or less rigid. Some have brightly colored leaves and others are often mottled, striped or barred. All are desirable foliage plants.

How to Grow Billbergias. All are tropical or semitropical and thus are hardy in outdoor gardens only in the deep south. But they are all easy to grow in pots and add distinction as well as beauty to the window garden.

In pots, they should have a soil of $\frac{1}{4}$ sand or sandy loam and $\frac{3}{4}$ peat, or leaf mould. There should be plenty of drainage material in the pot as poor drainage may soon destroy them. Do not overwater when first planted or in winter when semi-dormant. Nor should they become dry enough to shrivel the foliage. In hot weather when they are growing well, water liberally. Keep a drink of water in their cups in the center.

In the outdoor garden they should have the same soil as recommended for pots. A few, like "nutans," will grow in nearly any soil but will do much better in the type recommended.

They need about half shade. Too much sun will burn and finally destroy the foliage. Those species and varieties having highly colored foliage do not develop their rich colors when too deeply shaded. Most of our plants are grown in a well shaded Clivia house. When well established and growing, richer colors may be brought out by giving a little more sun than we do.

Billbergia calophylla. Large, bronze-green foliage with contrasting bars of grey. Very large, showy inflorescence of blood-red bracts and blue flowers. \$2.00.

B. corina. Beautiful foliage, barred grey. \$2.50.

B. distachia. Foliage, reddish green with cream spots. Long flower racemes with rose pink bracts and blue flowers with green margin. Blooms early spring and again in late summer. 50c. Three clones, slightly different, one of each for \$1.15.

B. nutans. The most popular of all as it blooms in midwinter and is very lovely. Pink bracts, blue and green flowers. 50c. Three for \$1.00.

B. Pyramidalis Hybrid. *Pyramidalis x Amoena.* Both parents are outstanding and this hybrid is no less. Beautiful in foliage and inflorescence. \$2.25.

B. rubro-cyanea. The most colorful in foliage, showing green, white and red combinations. Inflorescence, crimson bracts, flowers green, edged dark blue. To bring out colors in foliage give more sun exposure being careful that foliage does not burn. Two seedlings of this sanderiana-nutans hybrids at \$1.25 ea. or both for \$2.00.

B. speciosa. Foliage green above. Under side greyish green. Bracts rose, flowers pale green tipped with blue. \$2.00

B. Theodore L. Meade. (Meade's Hybrid). Nutans x Nobile. Handsome green foliage with vivid large inflorescence. It is called an everbloomer. But this does not mean that one plant blooms continuously or even almost. However a large group of plants will show flowers for nearly the entire year. It has no definite season but flowers from new leads as they reach the proper maturity. \$4.00.

B. thrysiflora. Mature foliage faintly barred. Summer blooming. Vivid inflorescence, scarlet bracts, blue and purple flowers. \$1.50.

B. Zebrina. Leaves with contrasting white bands and spots. Salmon bracts and green flowers. \$2.50.

Collection of all ten varieties, \$16.50.

The Big Four Collection includes Nutans, Distachia and two slightly different clones of Rubro-cyanea. Here you have the most colorful in foliage and a mid-winter bloomer, that would cost you singly \$3.50. The 4 for \$2.75.